NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

CHRONOLOGICAL HISTORY

FISCAL YEAR 1967

BUDGET SUBMISSION

Prepared by: PB-1
Final 9/12/66
X 2414n

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(Note: Only significant portions of legislative documents are reproduced herein. For complete text refer to the document itself.)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1967 Budget Submission
(In thousands of dollars)

SUMMARY

ITEM	AUTHORIZATION							APPROPRIATION				
	NASA Budget Submission	House Comm Action HR 14324 Rep No 1441 4/20/66	House and House Comm Approved Budget 5/3/66	NASA Reclama Action 4/15/66	NASA Revised Budget 4/15/66	Sen Comm Appd 5/23/66 Rep No 1184 Sen Appd 5/25/66	Conf Comm Appd 7/20/66 Rep No 1748 PL 89-528 8/5/66	House Comm Approved Rep No 1477 5/5/66	House Approved 5/10/66	Senate Comm Approved Rep No 1433 8/4/66	Senate Approved 8/10/66	Conf Comm Appd 8/17/66 Rep No 1859 PL 89-555 9/6/66
TOTAL APPROPRIATIONS:												
Research & Development.	4,246,600	+1,635	4,248,235	-1,635	4,246,600	4,248,600	4,248,600	4,245,000	4,245,000	4,246,600	4,246,600	4,245,000
Construction of Facilities.....	101,500	-7,081	94,419	+7,081	101,500	100,500	95,919	75,000	75,000	95,000	95,000	83,000
Administrative Operations.....	663,900	-19,689.85	644,210.15	+19,689.85	663,900	658,900	655,900	630,000	630,000	650,000	650,000	640,000
GRAND TOTAL.....	5,012,000	-25,135.85	4,986,864.15	+25,135.85	5,012,000	5,008,000	5,000,419	4,950,000	4,950,000	4,991,600	4,991,600	4,968,000
R&D Appropriation:												
OMSF.....	3,022,800	---	3,022,800	---	3,022,800	3,022,800	3,022,800					
OSSA.....	661,400	+3,500	664,900	-3,500	661,400	661,400	663,650					
OART.....	278,300	+11,900	290,200	-11,900	278,300	280,300	286,300					
OTDA.....	279,300	-13,965	265,335	+13,965	279,300	279,300	270,850					
OTU.....	4,800	+200	5,000	-200	4,800	4,800	5,000					
TOTAL R&D.....	4,246,600	+1,635	4,248,235	-1,635	4,246,600	4,248,600	4,248,600	4,245,000	4,245,000	4,246,600	4,246,600	4,245,000
CoF Appropriation:												
OMSF.....	54,378	-581	53,797	+581	54,378	53,378	52,797					
OSSA.....	6,322	---	6,322	---	6,322	6,322	6,322					
OART.....	32,100	-5,000	27,100	+5,000	32,100	32,100	29,600					
OTDA.....	1,700	---	1,700	---	1,700	1,700	1,700					
Fac. Plan'g and Design.	7,000	-1,500	5,500	+1,500	7,000	7,000	5,500					
TOTAL CoF.....	101,500	-7,081	94,419	+7,081	101,500	100,500	95,919	75,000	75,000	95,000	95,000	83,000
AO Appropriation:												
OMSF.....	328,254	-6,741	321,513	+6,741	328,254	*	*					
OSSA.....	81,853	-3,500	78,353	+3,500	81,853	*	*					
OART.....	188,977	-9,448.85	179,528.15	+9,448.85	188,977	*	*					
Supporting Operations..	64,816	---	64,816	---	64,816	*	*					
TOTAL AO.....	663,900	-19,689.85	644,210.15	+19,689.85	663,900	658,900	655,900	630,000	630,000	650,000	650,000	640,000
TOTAL NASA.....	5,012,000	-25,135.85	4,986,864.15	+25,135.85	5,012,000	5,008,000	5,000,419	4,950,000	4,950,000	4,991,600	4,991,600	4,968,000

GPO 911-408

Note: House Authorization Bill (HR 14324) provides that none of the funds provided therein shall be expended for the Venus Mariner Project.

* Undistributed.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1967 Budget Submission
(In thousands of dollars)

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RESEARCH & DEVELOPMENT APPROPRIATION:	4,246,600	+1,635	4,248,235	-1,635	4,246,600	4,248,600	4,248,600	4,245,000	4,245,000	4,246,600	4,246,600	4,245,000
OFFICE OF MANNED SPACE FLIGHT	3,022,800	---	3,022,800	---	3,022,800	3,022,800	3,022,800					
Gemini Program	(40,600)	(---)	(40,600)	(---)	(40,600)	(40,600)	(40,600)					
Spacecraft	19,100	---	19,100	---	19,100	19,100	19,100					
Launch vehicles	8,500	---	8,500	---	8,500	8,500	8,500					
Support	13,000	---	13,000	---	13,000	13,000	13,000					
Apollo Program	(2,974,200)	(---)	(2,974,200)	(---)	(2,974,200)	(2,974,200)	(2,974,200)					
Spacecraft	1,200,600	---	1,200,600	---	1,200,600	1,200,600	1,200,600					
Saturn IB	216,400	---	216,400	---	216,400	216,400	216,400					
Saturn V	1,191,000	---	1,191,000	---	1,191,000	1,191,000	1,191,000					
Engine development	111,000	---	111,000	---	111,000	111,000	111,000					
Mission support	255,200	---	255,200	---	255,200	255,200	255,200					
Advanced Missions Program	(8,000)	(---)	(8,000)	(---)	(8,000)	(8,000)	(8,000)					
Adv. missions studies.	8,000	---	8,000	---	8,000	8,000	8,000					
OFFICE OF SPACE SCIENCE AND APPLICATIONS	661,400	+3,500	664,900	-3,500	661,400	661,400	663,650					
Physics and Astronomy Program	(131,400)	(-4,500)	(126,900)	(+4,500)	(131,400)	(131,400)	(129,900)					
SR&T/Adv. studies	22,900	-3,000	19,900	+3,000	22,900	22,900	22,900					
Solar observatories	11,900	---	11,900	---	11,900	11,900	11,900					
Astronomical obser	29,200	-1,500	27,700	+1,500	29,200	29,200	27,700					
Geophysical obser	23,400	---	23,400	---	23,400	23,400	23,400					
Explorers	23,000	---	23,000	---	23,000	23,000	23,000					
Sounding rockets	19,000	---	19,000	---	19,000	19,000	19,000					
Data analysis	2,000	---	2,000	---	2,000	2,000	2,000					
Lunar and Planetary Exploration Program	(197,900)	(+30,000)	(227,900)	(-30,000)	(197,900)	(197,900)	(210,900)					
SR&T/Adv. studies	40,100	---	40,100	---	40,100	40,100	40,100					
Surveyor	90,400	---	90,400	---	90,400	90,400	90,400					
Lunar orbiter	24,600	---	24,600	---	24,600	24,600	24,600					
Mariner	26,100	+8,000*	34,100	-8,000	26,100	26,100	26,100					
Voyager	10,000	+22,000	32,000	-22,000	10,000	10,000	23,000					
Pioneer	6,700	---	6,700	---	6,700	6,700	6,700					

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* See "Note" on page 11.

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Sustaining University Program	(41,000)	(---)	(41,000)	(---)	(41,000)	(41,000)	(41,000)					
Training	22,000	---	22,000	---	22,000	22,000	22,000					
Research facilities	7,000	---	7,000	---	7,000	7,000	7,000					
Research	12,000	---	12,000	---	12,000	12,000	12,000					
Launch Vehicle Development Program	(33,700)	(---)	(33,700)	(---)	(33,700)	(33,700)	(33,700)					
SR&T/Adv. studies	4,000	---	4,000	---	4,000	4,000	4,000					
Centaur development	29,700	---	29,700	---	29,700	29,700	29,700					
Launch Vehicle Procurement Program	(152,000)	(-20,000) 1/	(132,000)	(+20,000)	(152,000)	(152,000)	(142,750) 2/					
Scout	10,400	*	*	*	10,400	10,400	*					
Delta	22,900	*	*	*	22,900	22,900	*					
Agena	54,700	*	*	*	54,700	54,700	*					
Centaur	64,000	*	*	*	64,000	64,000	*					
Bioscience Program	(35,400)	(-2,000)	(33,400)	(+2,000)	(35,400)	(35,400)	(35,400)					
SR&T	14,700	-2,000	12,700	+2,000	14,700	14,700	14,700					
Biosatellite	20,700	---	20,700	---	20,700	20,700	20,700					
Meteorological Satellites Program	(43,600)	(---)	(43,600)	(---)	(43,600)	(43,600)	(43,600)					
SR&T/Adv. studies	9,100	---	9,100	---	9,100	9,100	9,100					
Tiros/TOS improvements	2,600	---	2,600	---	2,600	2,600	2,600					
Meteorological flight experiment	5,500	---	5,500	---	5,500	5,500	5,500					
Nimbus	23,400	---	23,400	---	23,400	23,400	23,400					
Meteorological soundings	3,000	---	3,000	---	3,000	3,000	3,000					
Communications & Applications Technology Satellites Program	(26,400)	(---)	(26,400)	(---)	(26,400)	(26,400)	(26,400)					
SR&T/Adv. studies	4,600	---	4,600	---	4,600	4,600	4,600					
Applications technology satellites	21,800	---	21,800	---	21,800	21,800	21,800					

1/ The $20 million reduction was as follows: Undistributed $10 million, $6 million from Agena and $4 million from Centaur.

2/ $4 million reduction was against Centaur. Remaining $5.250 million was at the Program level.

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OFFICE OF ADVANCED RESEARCH AND TECHNOLOGY	278,300	+11,900	290,200	-11,900	278,300	280,300	286,300					
Basic Research Program	(23,000)	(---)	(23,000)	(---)	(23,000)	(23,000)	(23,000)					
SR&T	23,000	---	23,000	---	23,000	23,000	23,000					
Space Vehicle Systems Program	(36,000)	(---)	(36,000)	(---)	(36,000)	(36,000)	(36,000)					
SR&T	28,700	---	28,700	---	28,700	28,700	28,700					
Lifting body flight and landing tests	1,000	---	1,000	---	1,000	1,000	1,000					
Scout reentry project	4,800	---	4,800	---	4,800	4,800	4,800					
Small space vehicle flight experiments	1,500	---	1,500	---	1,500	1,500	1,500					
Electronics Systems Program	(36,800)	(---)	(36,800)	(---)	(36,800)	(36,800)	(36,800)					
SR&T	34,000	---	34,000	---	34,000	34,000	34,000					
Flight projects	2,800	---	2,800	---	2,800	2,800	2,800					
Human Factor Systems Program	(17,000)	(---)	(17,000)	(---)	(17,000)	(17,000)	(17,000)					
SR&T	15,500	---	15,500	---	15,500	15,500	15,500					
Small biotechnology flight projects	1,500	---	1,500	---	1,500	1,500	1,500					
Space Power & Electric Propulsion Syatems Program	(42,500)	(+2,400)	(44,900)	(-2,400)	(42,500)	(42,500)	(44,500)					
SR&T	37,000	---	37,000	---	37,000	37,000	37,000					
SNAP-8 development	5,500	+2,400	7,900	-2,400	5,500	5,500	7,500					
Nuclear Rockets Program	(53,000)	(---)	(53,000)	(---)	(53,000)	(53,000)	(53,000)					
SR&T	16,900	---	16,900	---	16,900	16,900	16,900					
NERVA	33,100	---	33,100	---	33,100	33,100	33,100					
NRDS operations	3,000	---	3,000	---	3,000	3,000	3,000					
Chemical Propulsion Program	(37,000)	(+7,500)	(44,500)	(-7,500)	(37,000)	(37,000)	(41,000)					
SR&T	33,500	---	33,500	---	33,500	33,500	33,500					
Large solid motor project	3,500	+7,500	11,000	-7,500	3,500	3,500	7,500					

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Aeronautics Program.....	(33,000)	(+2,000)	(35,000)	(-2,000)	(33,000)	(35,000)	(35,000)					
SR&T.....	9,000	1/	1/	1/	9,000	2/	*					
X-15 research aircraft	900	---	900	---	900	900	900					
Supersonic transport..	14,100	1/	1/	1/	14,100	2/	*					
V/STOL aircraft.....	5,000	1/	1/	1/	5,000	2/	*					
Hypersonic ramjet experiment.....	2,000	1/	1/	1/	2,000	2/	*					
XB-70 flight research program.....	2,000	---	2,000	---	2,000	2,000	2,000					
OFFICE OF TRACKING AND DATA ACQUISITION	279,300	-13,965	265,335	+13,965	279,300	279,300	270,850					
Tracking and Data Acquisition Program...	(279,300)	(-13,965)	(265,335)	(+13,965)	(279,300)	(279,300)	(270,850)					
Operations.....	199,000	-13,965	185,035	+13,965	199,000	199,000	190,550					
Equipment.....	66,500	---	66,500	---	66,500	66,500	66,500					
SR&T.....	13,800	---	13,800	---	13,800	13,800	13,800					
OFFICE OF TECHNOLOGY UTILIZATION	4,800	+200	5,000	-200	4,800	4,800	5,000					
Technology Utilization Program.....	(4,800)	(+200)	(5,000)	(-200)	(4,800)	(4,800)	(5,000)					
Identification.....	1,165	---	1,165	---	1,165	1,165	*					
Evaluation.....	650	---	650	---	650	650	*					
Dissemination.....	2,085	+200	2,285	-200	2,085	2,085	*					
Analysis.....	900	---	900	---	900	900	*					

1/ The House Authorization Committee increased this program by $2 million to be utilized only in these projects.

2/ The Senate Authorization Committee agreed with the House Authorization Committee.

* Undistributed.

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CONSTRUCTION OF FACILITIES APPROPRIATION:	101,500	-7,081	94,419	+7,081	101,500	100,500	95,919	75,000	75,000	95,000	95,000	83,000
ELECTRONICS RESEARCH CENTER	(10,000)	(-5,000)	(5,000)	(+5,000)	(10,000)	(10,000)	(7,500)					
R-Space guidance/optical communications lab...	4,954	*	*	*	4,954	4,954	*					
R-Qualifications & standards/electronic components lab.....	3,046	*	*	*	3,046	3,046	*					
R-Center support facilities (Phase III).....	2,000	*	*	*	2,000	2,000	*					
GODDARD SPACE FLIGHT CENTER	(710)	(---)	(710)	(---)	(710)	(710)	(710)					
T-Forty-foot antenna test bed.....	710	---	710	---	710	710	710					
JET PROPULSION LABORATORY	(350)	(---)	(350)	(---)	(350)	(350)	(350)					
S-Utilities installations.....	350	---	350	---	350	350	350					
KENNEDY SPACE CENTER	(37,876)	(---)	(37,876)	(---)	(37,876)	(37,876)	(37,876)					
M-Launch complex 39....	29,500	---	29,500	---	29,500	29,500	29,500					
M-Extension to central supply complex.....	600	---	600	---	600	600	600					
M-Add. to KSC Headquarters building....	3,500	---	3,500	---	3,500	3,500	3,500					
M-Utility installations MILA.....	2,897	---	2,897	---	2,897	2,897	2,897					
S-Mods. to launch complex 17.....	740	---	740	---	740	740	740					
S-Mods. to launch complex 12.....	639	---	639	---	639	639	639					
LANGLEY RESEARCH CENTER	(6,100)	(---)	(6,100)	(---)	(6,100)	(6,100)	(6,100)					
R-Reactive chemical distribution area....	1,089	---	1,089	---	1,089	1,089	1,089					
R-V/STOL transition research wind tunnel	5,011	---	5,011	---	5,011	5,011	5,011					

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M - Manned Space Flight facilities.
S - Space Science and Applications facilities.
R - Advanced Research and Technology facilities.
T - Tracking and Data Acquisition facilities.

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(In thousands of dollars)

ITEM	AUTHORIZATION							APPROPRIATION				
	NASA Budget Submission	House Comm Action HR 14324 Rep No 1441 4/20/66	House and House Comm Approved Budget 5/3/66	NASA Reclama Action 4/15/66	NASA Revised Budget 4/15/66	Sen Comm Appd 5/23/66 Rep No 1184 Sen Appd 5/25/66	Conf Comm Appd 7/20/66 Rep No 1748 PL 89-528 8/5/66	House Comm Approved Rep No 1477 5/5/66	House Approved 5/10/66	Senate Comm Approved Rep No 1433 8/4/66	Senate Approved 8/10/66	Conf Comm Appd 8/17/66 Rep No 1859 PL 89-555 9/6/66
LEWIS RESEARCH CENTER	(16,000)	(---)	(16,000)	(---)	(16,000)	(16,000)	(16,000)					
R-Expansion of propulsion systems lab. for supersonic research.....	14,000	---	14,000	---	14,000	14,000	14,000					
R-Installation of equip at hydrogen heat transfer fac. for hypersonic prop. research.....	2,000	---	2,000	---	2,000	2,000	2,000					
MANNED SPACECRAFT CENTER	(13,800)	(---)	(13,800)	(---)	(13,800)	(12,800)	(12,800)					
M-Lunar sample receiving lab.....	9,100	---	9,100	---	9,100	8,100	8,100					
M-Flight crew training facility.....	1,100	---	1,100	---	1,100	1,100	1,100					
M-Engineering bldg....	2,600	---	2,600	---	2,600	2,600	2,600					
M-Center support fac..	1,000	---	1,000	---	1,000	1,000	1,000					
MARSHALL SPACE FLIGHT CENTER	(581)	(-581)	(---)	(+581)	(581)	(581)	(-0-)					
M-Hazardous operations lab. addition.....	581	-581	---	+581	581	581	-0-					
MICHOUD ASSEMBLY FACILITY	(700)	(---)	(700)	(---)	(700)	(700)	(700)					
M-Modif. of chemical waste disposal sys..	700	---	700	---	700	700	700					
MISSISSIPPI TEST FACILITY	(1,700)	(---)	(1,700)	(---)	(1,700)	(1,700)	(1,700)					
M-Fac. to support S-IC & S-II test program.	1,700	---	1,700	---	1,700	1,700	1,700					
WALLOPS STATION	(205)	(---)	(205)	(---)	(205)	(205)	(205)					
S-Rocket storage magazine.....	205	---	205	---	205	205	205					
VARIOUS LOCATIONS	(6,478)	(---)	(6,478)	(---)	(6,478)	(6,478)	(6,478)					
M-Fac. for S-IV stage program.....	1,100	---	1,100	---	1,100	1,100	1,100					
S-Launch vehicle service tower.....	2,443	---	2,443	---	2,443	2,443	2,443					
S-Aerobee 350 launch facility.....	1,200	---	1,200	---	1,200	1,200	1,200					
S-Spin test facility..	745	---	745	---	745	745	745					

M - Manned Space Flight facilities.
S - Space Science and Applications facilities.
R - Advanced Research and Technology facilities.
T - Tracking and Data Acquisition facilities.

Prepared by: PB-1
Final 9/12/66
X 24146

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1967 Budget Submission
(In thousands of dollars)

ITEM	AUTHORIZATION							APPROPRIATION				
	NASA Budget Submission	House Comm Action HR 14324 Rep No 1441 4/20/66	House and House Comm Approved Budget 5/3/66	NASA Reclama Action 4/15/66	NASA Revised Budget 4/15/66	Sen Comm Appd 5/23/66 Rep No 1104 Sen Appd 5/25/66	Conf Comm Appd 7/20/66 Rep No 1748 PL 89-528 8/5/66	House Comm Approved Rep No 1477 5/5/66	House Approved 5/10/66	Senate Comm Approved Rep No 1433 8/4/66	Senate Approved 8/10/66	Conf Comm Appd 8/17/66 Rep No 1859 PL 89-555 9/6/66
T-Water dist. & sewage disposal systems.....	990	---	990	---	990	990	990					
FACILITY PLANNING & DESIGN	(7,000)	(-1,500)	(5,500)	(+1,500)	(7,000)	(7,000)	(5,500)					
ADMINISTRATIVE OPERATIONS APPROPRIATION:	663,900	-19,689.85	644,210.15	+19,689.85	663,900	658,900	655,900*	630,000	630,000	650,000	650,000	640,000
BY OBJECT CLASSIFICATION:												
Personnel compensation.	375,354				375,354	397,444 1/						
Personnel benefits.....	27,090				27,090							
Travel & transportation of persons.....	21,279				21,279							
Trans. of things.....	5,048				5,048							
Rent, comm. & utilities	56,417				56,417							
Printing and reprod....	4,916				4,916							
Other services.....	112,317	-19,689.85	644,210.15	+19,689.85	112,317	261,456 1/						
Services of other agencies.....	15,221				15,221							
Supplies and materials.	26,122				26,122							
Equipment.....	14,696				14,696							
Lands and structures...	5,408				5,408							
Insurance claims & indemnities.....	32				32							
BY INSTALLATION:												
Kennedy Space Center...	98,108				98,108							
Manned Spacecraft Ctr..	98,212	-6,741	321,513	+6,741	98,212							
Marshall Sp. Flt. Ctr..	131,934				131,934							
Goddard Sp. Flt. Ctr...	71,687	-3,500	78,353	+3,500	71,687							
Wallops Station.....	10,166				10,166							
Ames Research Center...	33,475				33,475							
Electronics Res. Ctr...	15,143				15,143							
Flight Research Ctr....	9,641	-9,448.85	179,528.15	+9,448.85	9,641	658,900						
Langley Research Ctr...	62,587				62,587							
Lewis Research Ctr.....	66,284				66,284							
Space Nuc. Prop. Ofc...	1,847				1,847							
NASA Headquarters.....	58,667				58,667							
Western Operations Office.....	6,149	---	6,149	---	6,149							

1/ See page No. 26.

* Undistributed.

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N 24146

89TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } { No. 1441

AUTHORIZING APPROPRIATIONS TO THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

APRIL 20, 1966.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. MILLER, from the Committee on Science and Astronautics, submitted the following

REPORT

[To accompany H.R. 14324]

The Committee on Science and Astronautics, to whom was referred the bill (H.R. 14324) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and administrative operations, and for other purposes, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1967, as follows:

Programs	Authorization	Report page No.
Research and development	$4,248,235,000	2
Construction of facilities	94,419,000	87
Administrative operations	644,210,150	97
Total	4,986,864,150	

EXPLANATION OF THE BILL

Research and Development

SUMMARY

Programs	Authorization	Report page No.
1. Gemini	$40,600,000	3
2. Apollo	2,974,200,000	6
3. Advanced missions	8,000,000	22
4. Physics and astronomy	126,900,000	23
5. Lunar and planetary exploration	227,900,000	31
6. Bioscience	33,400,000	41
7. Meteorological satellites	43,600,000	47
8. Communication and applications technology satellites	26,400,000	54
9. Launch vehicle development	33,700,000	56
10. Launch vehicle procurement	132,000,000	58
11. Space vehicle systems	36,000,000	61
12. Electronics systems	36,800,000	63
13. Human factor systems	17,000,000	65
14. Basic research	23,000,000	65
15. Space power and electric propulsion systems	44,900,000	66
16. Nuclear rockets	53,000,000	70
17. Chemical propulsion	44,500,000	72
18. Aeronautics	35,000,000	75
19. Tracking and data acquisition	265,335,000	78
20. Sustaining university program	41,000,000	82
21. Technology utilization	5,000,000	85
Total	4,248,235,000	

COMMITTEE ACTIONS

Research and Development

Physics and Astronomy Program

Supporting Research and Technology/Advanced Studies

In order to make available additional funds for the unmanned exploration of the planet Mars, the committee has reduced the NASA request of $22,900,000 for these purposes by $3 million.

Astronomical Observatories

In order to make available additional funds for the unmanned exploration of the planet Mars, the committee reduced the NASA request of $29,200,000 for astronomical observatories by $1.5 million, the amount earmarked for the fifth OAO spacecraft. This is the third year in a row that the committee has voted to defer funding of the fifth and last OAO spacecraft. There appears to be no overriding urgency in pursuing this mission; the tentative launch date is at the end of this decade, and experiments have not yet been selected. Furthermore, astronomical observations can be delayed without affecting other projects, and they need not be scheduled to coincide with predictable natural phenomena.

The committee would prefer to have the results of the first OAO mission before approving a fifth spacecraft in this program.

Lunar and Planetary Program

Mariner

The committee voted to increase, by $20 million, the amount requested by NASA to underwrite the two scheduled Mariner flyby missions to Mars in 1969. These additional funds are to be used for the development of a small probe to be incorporated in the basic spacecraft. Once in the vicinity of Mars, this probe will be separated from the Mariner spacecraft, and injected into a trajectory so that it will impact the surface of Mars. As it passes through the Martian atmosphere, this instrumented capsule will make direct measurements of the density, temperature, and constituents of the atmosphere. Data of this type can have a major impact upon the Voyager project.

The committee considers such a probe essential for several reasons. To begin with, there continue to be important areas of uncertainty regarding the characteristics of the Martian atmosphere. These atmosphere properties will have a bearing upon many aspects of the design of the Voyager lander capsule, upon the mission profile, and on the weight of scientific payload that can be landed on the surface of Mars. In the absence of more precise data on the Martian atmos-

phere, the entire Voyager landing system will have to be designed for a range of atmospheric conditions.

The most efficient and economical way to build the Voyager spacecraft is first to acquire this vital data, and then design the capsule lander for the specific atmospheric conditions that will be encountered. A direct measuring device such as the instrumented probe recommended by this committee is considered by the experts to be the best method for developing such data.

A small probe incorporated in the 1969 Mariner spacecraft, would contribute to Voyager in other important ways. It would bring our scientists and engineers face to face with the sterilization problem that is common to both missions. Intensive work in this area would have to begin at once in order to meet the 1969 launch date, and Voyager would get all the benefit of this work.

Moreover, valuable experience will be gained in developing a system for separating a capsule lander from the mother spacecraft, something never attempted before. In addition, the communications relay system from the capsule to the bus and then back to earth, another technique never attempted, would have to be perfected for the 1969 mission. These, and many other difficult aspects common to both missions can be dealt with on a small scale with a 1969 Mariner probe. The problems we must cope with in Voyager will be more clearly defined, our mistakes will be much less costly, and whatever is learned will be directly applicable to Voyager.

These are real problems crying for solutions; and the best way to achieve those solutions is in the real world of actual experience. It is in this sense that a probe incorporated in the 1969 Mariner spacecraft will transform that mission into an integral part of the Voyager project, whereas the simple flyby mission proposed by NASA would make relatively small contributions to Voyager.

Such a probe has been studied in detail at the Ames Research Center and the Jet Propulsion Laboratory. During this year's hearings, the committee received the testimony of experts from Ames and JPL on this subject. Both stated that the project is feasible, and they indicated their support of the undertaking. There was unreserved agreement that such a probe would enhance the 1969 Mars mission. Moreover, the witness from NASA Headquarters testified that if funds were avaialble, the Office of Space Science and Applications would favor this Martian atmospheric probe as part of the 1969 Mariner mission.

In order to make available additional funds for the unmanned exploration of the planet Mars, the committee voted to eliminate all funds to support the proposed Mariner mission to Venus in 1967.

NASA's intention was to utilize the spare Mariner IV Spacecraft left over from the 1965 Mars flyby mission, make some minor modifications, and then equip this vehicle with appropriate experiments. The total cost of this mission to Venus would have been slightly more than $38 million. Approximately $18 million of the fiscal year 1967 budget request has been earmarked for this Venus mission, of which $12 million would be needed for modification of the spacecraft and development of experiments, and $6 million for the Atlas-Agena launch vehicle.

This Venus mission in 1967 was introduced into the planetary exploration program a mere 3 months ago, in fact, at the time the major decision was taken to delay Voyager 2 years. Unfortunately, the Venus mission has all the appearances of being both a makeshift and an afterthought. The main purpose is believed to be little more than an urge to do something, anything, between now and 1969 in the planetary area.

It is noteworthy that, prior to last December, there was no plan to use the 1967 opportunity for exploring Venus, nor were there any but the vaguest plans to take future opportunities. Furthermore, last year, when the NASA budget was not nearly as tight as now, Venus did not figure in OSSA plans. Even now, there are no firm plans to explore Venus beyond this proposed 1967 mission.

If the 1967 Venus mission were a precursor flight, it might be justified. Furthermore, if the exploration of Venus had high priority, the idea of a 1967 mission would have occurred to someone in NASA before December, and later missions would also have been scheduled.

The exploration of Mars, on the other hand, is a project to which NASA is virtually committed; and for the reasons stated previously, the committee feels that NASA's concentrated efforts should be directed toward achieving successful Voyager missions to Mars. We must all accept the fact that the attainment of one goal sometimes requires sacrificing others. Since there is no doubt that NASA has given first priority to the exploration of Mars, the committee voted to eliminate all funds for the 1967 Venus mission in the forthcoming fiscal year, and to apply that authorization to the 1969 Mars Mariner and Voyager projects.

Note: The Mariner effort was increased by a net of $8,000,000. This consisted of (1) reduction of $12,000,000 by eliminating the Venus mission (totalling $18,000,000 of which $6,000,000 was for procurement of the Atlas-Agena launch vehicle and the reduction is applied to "Launch Vehicle Procurement") and (2) an increase of $20,000,000 generated partly by reductions in other areas for the purpose of emphasizing the Mars effort (e.g., $3,000,000 SR&T and $1,500,000 for fifth OAO in Physics and Astronomy).

Voyager

The committee is convinced of the importance of the planetary exploration program. Last year, $43 million was authorized for Voyager, the full amount of the request. Much of this money has since been reprogramed into other projects, and work on Voyager has slowed almost to a stop.

Due to severe funding constraints resulting primarily from the conflict in Vietnam, a decision was made by NASA some 3 months ago to delay the first launch of Voyager from 1971 until 1973. While the committee regrets the necessity of such a delay in this important program, the additional 2 years can be viewed as a rich opportunity to do vital preliminary work that can make real contributions to the success of Voyager missions beginning in 1973.

NASA's request for funds to underwrite such preliminary work during the forthcoming fiscal year, however, amounts to a mere $10 million. The committee is convinced that for a project which is destined to be one of the most complex and difficult ever undertaken by NASA, and in which the American taxpayer will be asked to invest $3 billion or more during the next decade, every effort should be made in these early years to do as much preliminary work as possible.

At the present level of funding, it is the judgment of the committee that the additional 2 years now available for concentrated preliminary work will be lost.

Experience clearly points to the necessity for sufficiently detailed advance study and design work in complex space projects. If there is one single feature that is common to the least successful of NASA's flight projects—those which have been marked by lengthy schedule delays, and enormous cost overruns—it is that there was inadequate preparatory work.

The committee does not wish Voyager to undergo similar schedule delays and cost overruns.

There are many areas that need attention. New long-life electronic and electromechanical components must be developed, as well as new power supplies and associated equipments, just to mention a few.

Perhaps the single most difficult problem has to do with sterilization of the capsule lander portion of the Voyager spacecraft. Our Government is committed, as a matter of declared policy, to avoid any possible contamination of Mars by Earth organisms during our exploratory missions to that planet. Therefore, any capsule lander must be thoroughly sterilized. Expert witnesses have testified that this is a most challenging requirement; since sterilization tends to degrade most equipment, this requirement will have a direct bearing upon the reliability of virtually all subsystems and components of the capsule lander. The fact of the matter is that our scientists and engineers do not yet know how to sterilize such a capsule, or even if it is possible to do so. The sooner we get on with our experimental work in this area the better.

It is the judgment of the committee that the expenditure of relatively modest amounts of additional money in fundamental preliminary work during these early years of the Voyager project will ultimately save vastly larger sums during the period of hardware procurement toward the end of this decade.

After considering testimony of NASA's request for $10 million for the Voyager project for fiscal year 1967, the committee concluded that this level of effort would be entirely inadequate to make the best use of the additional time now available. Accordingly, the committee voted unanimously to increase NASA's request for Voyager by $22 million. This will provide a total of $32 million for the preliminary work on Voyager which we regard as the minimum effort to provide the basis for an effective and economical long-term program.

Supporting Research and Technology

In order to make available additional funds for the unmanned exploration of the planet Mars, the committee has reduced the NASA request of $14,700,000 for these purposes by $2 million.

Launch Vehicle Procurement Program

Each year there has been a substantial carryover in unobligated funds in the "Launch vehicle procurement" account. This annual carryover results from the fact that delays inevitably occur in a certain number of spacecraft development projects. When such delays occur, launch schedules are revised, with the result that fewer launch vehicles are needed to support actual flight programs during any given year. On the basis of an expected carryover of funds in the "Launch vehicle procurement" account at the conclusion of fiscal year 1967, the committee voted to reduce NASA's request for $152 million by $10 million, an amount considered nominal in the light of experience.

Agena Procurement

Six million dollars was requested by NASA to underwrite the purchase of an Atlas-Agena launch vehicle to be used for the 1967 Venus Mariner mission. The committee voted to deny authorization for that mission, and the launch vehicle procurement request is therefore reduced by $6 million.

Centaur Procurement

The committee voted to reduce the $14 million request for sustaining, engineering and maintenance for the Centaur launch vehicle by $4 million. The committee has criticized this budget item in the past. SEM funds are normally used for "product improvement"; that is, to upgrade reliability or improve performance capabilities of developed launch vehicles. Centaur is still an undeveloped vehicle for which $29.7 million has been requested and authorized to underwrite continuing development during fiscal year 1967. It is the feeling of the committee that until a launch vehicle has completed its development phase, SEM funds should not be required. All necessary funds to complete development should be carried in the launch vehicle development line item. However, the committee has approved $10 million for the work which NASA has programed under the procurement line item.

Space Power and Electric Propulsion Systems

NASA requested $42,500,000 for this program in fiscal year 1967. A major project included in this area is the development of the SNAP–8 nuclear electric power generator. This generator is designed to provide approximately 35 kilowatts of electrical energy for a continuous 10,000-hour period. The fiscal year 1966 budget request of NASA did not include funds for the continuation of the program. Congress authorized $6 million for its continuation in fiscal year 1966 and NASA continued the program.

Testimony taken by the committee revealed that there is no other system existing or under development that offers the long life and maintenance-free operation that is possible with this type of device. In fiscal year 1967 NASA will continue the project but at a minimum level.

The committee is deeply aware that space power is indispensable to future space operations. Also it concluded that a more meaningful component testing program is necessary. Therefore, this program was increased $2.4 million to make possible an increased component testing program and to insure that minor component failures would not cause a major system shutdown in these tests. The total amount authorized is $44.9 million. The total amount available for the SNAP–8 program is $7,900,000 which is to be used only for further development of this system.

Chemical Propulsion Program

The NASA chemical propulsion program request for fiscal year 1967 was $37 million including the large solid motor project (260-inch solid propellant booster). Testimony revealed that NASA intends to fire an additional short-length 260-inch booster. Additional funds would be needed to make a full-length firing. Since two successful short-length booster firings have been made the committee feels that this project should be continued by firing a full-length motor which is the ultimate goal rather than utilize funds for further investigation of short-length boosters. The committee, therefore, increased the authorization for this project by $7.5 million, making the total for this project $11 million. This additional amount will allow NASA to conduct a full scale firing by December 1967 and will provide needed development of a failure warning system and thrust termination controls. NASA is therefore directed to utilize these funds only for the further development of the 260-inch solid propellant booster. The total amount authorized in the chemical propulsion program is $44.5 million.

Aeronautical Program

The NASA request for aeronautical research has been reduced for fiscal year 1967 by $8.5 million from the fiscal year 1966 programed amount. The committee is concerned that the funds for this program area are being decreased while many important and outstanding aeronautics problems remain unsolved. V/STOL research is being increased; however, the amounts programed for reducing aircraft noise and for supersonic aircraft development has decreased. Progress in these three general areas of research has a widespread effect upon the aircraft industry, the national economy, the broad and efficient use of our airports and the area about them. For these reasons the committee has done much in past years to foster an aggressive aeronautical research program and it is the desire of the committee that NASA do so in future years. Therefore, since the planned program for fiscal year 1967 is funded at a minimal level the committee increased this program by $2 million, bringing the total to $35 million. These additional funds are to be utilized only in the fields of V/STOL, aircraft noise, and for supersonic and hypersonic aircraft development.

Tracking and Data Acquisition

The NASA request of $279,300,000 for this program was reduced by $13,965,000. The budget request for network operations was increased by 45 percent over fiscal year 1966. Although there are increased funding requirements in the program, the committee is not convinced that the full amount requested is needed for network operations. Also, since this program has consistently failed to utilize funds to the extent of its authorization, the requested amount was reduced. Therefore, the amount approved for "Tracking and Data Acquisition" is $265,335,000.

Technology Utilization

NASA requested $4.8 million for this program in fiscal year 1967. The committee increased this amount by $200,000 making the total for this program $5 million. The committee feels that the potential of this program in speeding the flow of new techniques to the industrial community is so great that these additional funds can be profitably used. Although the quantity and applicability of new ideas for dissemination have been growing within NASA, the committee believes that the flow of these materials can be more widely and quickly distributed. This is particularly true for small business. It is the desire of the committee that the private sector of our industry be given this new information resulting from space experimentation as quickly as possible. Testimony presented in the authorization hearings indicates that there are a number of areas where additional effort may be fruitful. NASA should pursue these areas to give the general business community every opportunity to capitalize on promising ideas as they evolve.

There is an obvious similarity of purpose between the NASA program and that of the Office of State Technical Service in the Department of Commerce resulting from the State Technical Services Act of 1965. These programs should be complimentary rather than duplicatory. Therefore NASA is directed to report to the committee by January 1, 1967, on means of coordination and the extent of cooperative activities that have been carried out by the two agencies in calendar year 1966.

CONSTRUCTION OF FACILITIES

Electronics Research Center

NASA requested $10 million for the construction of two new laboratories and center support facilities. The committee reduced the new authorization to $5 million, to be used only for the construction of the Space Guidance-Optical Communications Laboratory, the Qualifications and Standards-Electronic Components Laboratory, and associated center support facilities. This was done primarily because none of the $18,900,000 authorized in the 3 prior fiscal years for ERC site procurement and for construction yet has been obligated.

The construction funds authorized in prior years, plus those recommended for fiscal year 1967—a sum totaling $20 million—are considered adequate to finance any possible building construction during the next year and a half. Accordingly, following the acquisition, clearing and grading of portions of the Kendall Square site by the Cambridge Redevelopment Authority, and the transfer to NASA of sufficient tracts of land, the committee expects NASA to proceed with diligence toward the construction of utilities, support facilities, and the several authorized ERC buildings as soon as circumstances permit.

Marshall Space Flight Center

NASA requested $581,000 to provide an addition to the Hazardous Operations Laboratory. The addition was requested to permit space for the development of improved instrumentation associated with hazardous fuels, acoustic loads, and vehicle fire detection and to continue development and improvement of primary power sources. The committee took note of the fact that the NASA justification for this project was related primarily to the development of more sensitive instrumentation to monitor the performance characteristics of "space vehicles with greater design sophistication" fabricated "as more complex space projects are formulated." The committee also noted that the Hazardous Operations Laboratory became available during fiscal year 1966. In view of the fact that the Laboratory has only recently become available and that the proposed addition appears to be required for other than approved, ongoing programs, the committee deleted the proposal to construct the addition, pending the approval of future programs which would require more complex instrumentation.

Facility Planning and Design

NASA requested $7 million for facility planning and design activities for fiscal year 1967. The request was based on requirements of $1.5 million for preliminary design of fiscal year 1969 construction projects and other special studies, $3.5 million for the completion of plans and specifications for fiscal year 1968 construction projects, and $2 million for final engineering and design of the NERVA engine/test stand complex at the Nuclear Rocket Development Station.

The committee recognizes the essentiality of authorization and funds for these purposes and has strongly advocated their judicious use in the interest of improved construction management procedures. The committee acknowledges that the fiscal year 1967 request is premised on a reasonable level of construction effort consistent with foreseeable requirements. However, the committee is concerned over the large balance of unfunded authorization available for these purposes. Testimony received indicates that $11.9 million of prior authorization remains unfunded, and of funds made available for facility planning and design, approximately $5 million remains unobligated.

On the basis of these unfunded and unobligated balances, the committee reduced the request by $1,500,000, authorizing a total of $5,500,000 for fiscal year 1967 facility planning and design.

Statutory Limit for Architect-Engineer Services

In the proposed "National Aeronautics and Space Administration Authorization Act, 1967," NASA recommended that the National Aeronautics and Space Act of 1958 be amended to authorize NASA to enter into contracts, when determined to be necessary by the Administrator, for architect-engineer services for highly complex research and development facilities without regard for the 6-percent limitation for such services imposed by 10 U.S.C. 2306(d).

The committee agrees that NASA should be afforded some relief from the 6-percent limitation on architect-engineer fees for highly complex research and development facilities. However, the committee does not concur in the amendment to the National Aeronautics and Space Administration Act of 1958 as proposed by NASA. As an interim measure, pending possible revision to the statutes regarding limitations on these types of services, the committee has approved a substitute provision, which would permit the Administrator to make determinations in this regard until June 30, 1967, using fiscal year 1967 and prior years' funds. The extent of this authority is limited to highly complex research and development facilities requiring architect or engineer services in addition to those normally required for the production and delivery of designs, plans, drawings and specifications, or in order to safeguard against hazards such as explosion, radiation, or contamination. Under the substitute provision, the Administrator or his designee is required to report on each instance when this authority is exercised, in order that the matter may be kept under continuing committee surveillance.

The committee notes that a June 1965 report to the Congress by the Comptroller General, cites NASA for noncompliance with the statutory limitations on amounts allowable for architectural-engineering services concerning the design of the engine maintenance, assembly and disassembly facility at the Nuclear Rocket Development Station. In that report the Comptroller General took issue with the way in which NASA had applied the limitation on the cost of architect-engineer contracts imposed by 10 U.S.C. 2306(d). The statute in question limits the amount to be paid for architect-engineer services under a cost-plus-fixed-fee contract to 6 percent of the estimated cost of the construction project to which such services relate. NASA is bound to that provision of title 10, Armed Services Act, by section 301(b) of the National Aeronautics and Space Act of 1958.

NASA contends that their interpretation of the statutory limitation is not unlike that of other Federal agencies in that only the work performed by an architect-engineer which relates to the production and delivery of designs, plans, drawings and specifications is subject to the 6-percent limitation. All other work such as conceptual studies, subsurface investigations, research and development for structures and materials, and special engineering for the hazards of explosion, radiation or contamination, which must precede actual design, is not subject to the 6-percent limitation on architect-engineer fees.

The committee has carefully reviewed this matter and considers that the limitation on fees for services of this nature requires further review on a Government-wide basis with a view toward revision or better definition of the legislative intent. The limitation, which dates back to 1939, may have been adequate or even liberal in the era during which it was enacted by statute. However, as the technological revolution has gained momentum, a requirement for an increasing number of state-of-the-art facilities has developed. Highly complex facilities without precedent require considerable conceptual study before the design can proceed.

The legislative intent of the original act is obscure, and it is not certain that preliminary studies of this nature are in fact subject to the 6-percent limitation. Varying interpretations throughout the Federal Government have resulted. For example, one agency has excluded preliminary or special studies from the 6-percent limitation by regulatory definition. Another agency, the Atomic Energy Commission, has determined under 40 U.S.C. 474(12) that the 6-percent limitation contained in the Federal Property and Administrative Services Act (similar provision to 10 U.S.C. 2306(d)) is not applicable to it.

In view of inconsistencies in interpretation, the committee considers that a comprehensive analysis on a Government-wide basis should be undertaken by the Comptroller General, and that a report with conclusions and recommendations for legislative action should be submitted to the Congress by that agency on or before January 1, 1967.

Administrative Operations

The NASA request for the support of the administrative operations for fiscal year 1967 was $663,900,000. The committee reduced this amount by $19,689,850 and authorizes $644,210,150 for all centers.

NASA requested a total of $328,254,000 for administrative operations for the three manned space flight centers. Of the $328,254,000 requested, $98,108,000 was for the Kennedy Space Center; $98,212,000 for the Manned Spacecraft Center; and $131,934,000 for the Marshall Space Flight Center which also includes the Michoud Assembly Facility and the Mississippi Test Facility. The total increase from fiscal year 1966 budget plans for this item is $32,721,000, partly due to increased launch activities in the manned space flight program, an increase in personnel at the Kennedy Space Center and the Manned Spacecraft Center, and the pay increase made effective during calendar year 1965. The largest increase by object classification took place in the category of "Other Services" which provides, among other things, for payments to service and support contractors involved in launch operations and programs. The largest increase by facility, for the same reasons already mentioned, would take place at the Kennedy Space Center where the request for administrative operations funds increased over $18 million from the fiscal year 1966 level.

The committee reasoned that any adjustments made should not interfere directly with the increased launch schedules for manned space flight programs during fiscal year 1967. Additional Gemini flights will be made during this time period and the Apollo flight launch schedule will be doubled during this same fiscal year. Accordingly, the committee concluded that, in the interests of encouraging austerity in NASA internal operations, reductions could be made in specific object classifications. These reductions are in the form of restricting the NASA authorization for these object classifications during fiscal year 1967 to the same level contained in the fiscal year 1966 budget plan. Specifically, the committee approved authorization at the fiscal year 1966 level of effort in the object classifications of "Transportation of Things, Printing and Reproduction, Supplies and Materials, Equipment, and Lands and Structures" for the three manned space flight centers. The resulting reductions amount to a total of $6,741,000 for these classifications. It should be noted that these reductions, or more exactly this rollback of requests to the fiscal year 1966 level, would be reflected without reference to any particular center, thereby providing NASA some degree of flexibility.

The authorization request for fiscal year 1967 for administrative operations to support Space Science and Applications programs at the Goddard Space Flight Center and Wallops Station was $81,853,000 as compared to $79,391,000 requested for similar purposes in fiscal year 1966. It was noted that the NASA fiscal year 1966 budget plan includes only $73,486,000 for administrative operations at these installations. The committee is concerned over the rising costs of maintenance and operations at NASA installations which appear to be increasing at a faster rate than considered warranted, particularly at Goddard. The committee reduced the request for administrative operations by $3,500,000 at these two centers, specifically identifying object classes to be reduced as follows: "Rents, Communications, and Utilities," $700,000; "Other Services," $1,600,000; "Supplies and Materials," $300,000; "Printing and Reproduction," "Transportation of Things," "Equipment," and "Lands and Structures," $900,000.

A total of $188,977,000 was requested by NASA for administrative costs of advanced research being conducted at the following six Centers: Ames Research Center; Electronics Research Center; Flight Research Center; Langley Research Center; Lewis Research Center; Space Nuclear Propulsion Office. The committee reduced the budget request by $9,448,850 by applying a 5-percent reduction of the amounts requested. This results in a committee authorization of $179,528,150 for supporting administrative operations of the Office of Advanced Research and Technology.

The committee is convinced that the Centers can absorb these reductions by the application of appropriate management procedures without in any way inhibiting the research programs.

Additionally, the committee stipulates that the amount authorized for expenditure in all object classifications within administrative authorization for the Electronics Research Center shall not exceed $14,385,850. The committee is convinced that the full amount requested could not be utilized since the plans for the development of this Center have not progressed as originally scheduled.

Reprograming

NASA requested that the authority to transfer funds from the "Research and Development" to the "Construction of Facilities" appropriations be increased from one-half of 1 percent of the amount authorized for R. & D., as enacted for the fiscal year 1966 program, to 1 percent for fiscal year 1967. No request for change was made with regard to the transfer authority of $10 million within the C. of F. program as enacted starting with fiscal year 1966.

The extent to which NASA should be authorized to transfer funds to meet unforeseen requirements remains a subject of continuing concern to the committee. Close surveillance over NASA activity in this area is maintained on a year-round basis. The use of this authority by NASA has declined markedly in recent years, and the committee commends the agency for the propitious care that has been exercised in limiting the use of the authority.

The committee recognizes that the dynamic nature of the space program precludes, to a certain extent, the ability to forecast detailed facilities requirements that will remain unchanged during any given fiscal year. Recognition is also afforded to the possibility that drastic changes in facilities requirements may occur as a result of international developments, major technological breakthroughs, or major program reorientation. However, the inherent design and construction leadtimes for major facilities is such that authorization and/or appropriations could be secured either through supplemental or annual legislation to meet emergency needs.

Accordingly, the committee has reduced the authority to transfer funds from the the R. & D. to the C. of F. appropriations from 1 percent of the R. & D. appropriation, as proposed by NASA for fiscal year 1967, to one-half of 1 percent. The $10 million transfer authority within the C. of F. appropriation is approved as requested.

COMMITTEE VIEWS

Apollo Applications Program

The committee has, after careful review, authorized the NASA request for $41,900,000. In doing so it recognizes that this action keeps the option open for more forceful activity in this area in the years ahead, noting further that this sum is considerably below the original amount of $264 million which NASA proposed to the Bureau of the Budget. This is of special significance since this is the peak year in Apollo funding and the development of future activity must necessarily depend on studies of the use of the present techniques available to this Nation within the capabilities developed within the Apollo program. The possibilities are enormous, ranging through a multitude of proposals offering exciting hopes of accomplishment. But to take advantage of these necessitates penetrating study and careful consideration. Therefore, it is the sense of the committee that definite plans for Apollo applications be submitted to the Congress well in advance of the submission of the NASA fiscal year 1968 authorization request to allow for orderly program review and to foster program accomplishment at minimum costs and maximum utilization of the technological and production capabilities that have been developed through the Apollo program. Since so much emphasis has been placed on this aspect of the budget for fiscal year 1968 it will need to be reviewed at an early date.

Advanced Missions

The committee considers NASA advanced planning studies essential to orderly progress in the national space program and to gaining the maximum return on money already committed to these efforts. The committee, however, notes the need on the part of NASA to assume the most definite future planning possible for fiscal year 1968 and beyond to achieve the above objectives. The committee further notes that NASA plans to allocate $1,500,000 for advanced vehicle studies. In view of the fact that future mission constraints are determined primarily by launch vehicle capability, the committee recommends that additional funds be programed within advanced missions in this area.

Research Facilities Grants

The committee considers the sustaining university program an essential adjunct to the Nation's space effort. The provision of facilities at universities throughout the Nation is an important element of the grant program.

According to the 14th Annual Report of the National Science Foundation, the total requirement for Federal assistance in meeting nationwide facilities needs at universities is estimated at $400 million. Federal assistance programs for graduate research facilities of the Office of Education, the National Science Foundation, the National Institutes of Health will provide an estimated annual funding level of $155 million toward the elimination of this deficit. NASA's proposed contribution toward this end for fiscal year 1967 amounts to $7 million, a level which falls far short of the recommendations of the Space Science Board of the National Academy of Sciences, in the so-called Woods Hole report, issued last fall, which recommends an annual NASA program of $15 to $20 million for laboratory facilities at universities.

During the past year the committee has reviewed the facilities grant portion of NASA's sustaining university program in detail. Three areas appearing to warrant closer attention on the part of NASA are as follows:

(1) There is a considerable delay in awarding grants after enactment of enabling legislation.

(2) A wide variation in unit costs for basic structures is evident.

(3) Annual authorization requests are based on lump-sum dollar amounts for a given number of square feet of laboratory space to be built at unspecified locations.

The committee is of the opinion that this program should be more responsive to the Nation's needs. More timely grants, better uniformity in cost estimates, and more specific budget supporting data could be achieved by NASA through a more effective system of preliminary engineering. The committee urges NASA to take steps to improve the responsiveness of this program, and to give consideration to the use of facility planning and design funds within the C. of F. program, or to the adoption of a similar system within the funds authorized for the sustaining university program, toward this end.

Warehousing Space at Kennedy Space Center

The committee is concerned over the NASA use of vacated residential structures at the Merritt Island area at Kennedy Space Center for storage space for supplies and materials. The committee believes that such practice may actually result in higher operating costs than is normal in standard warehousing practices as well as inefficiencies in operations. Therefore, the committee recommends that NASA study the potential cost savings and increased efficiency of operations which might result by replacing this storage with standard warehousing construction. The space amounts to 15,000 square feet and NASA has estimated that replacement warehousing space would cost $185,000.

Automatic Data Processing

The committee continues to be concerned over the rapid growth of computer requirements throughout NASA. Of particular concern is the increases in rental and maintenance costs of automatic data processing equipment which have risen from an agency wide level of $42 million in fiscal year 1965 to an estimated $54 million for fiscal year 1967.

Studies by the committee during 1965 revealed a requirement for better management surveillance over this element of the space program on the part of NASA. The committee is pleased to note that NASA has taken steps to eliminate some of the deficiencies which were heretofore apparent. Better management cognizance over computer activities in the field appears to be evolving. Long-range plans are being developed, and there is emerging a system of centralized policy direction and coordination at the NASA headquarters level, improvements long overdue. NASA is urged to continue close top management control over computer activities to assure that maximum economies are effected.

From extensive testimony received in conjunction with the fiscal year 1967 authorization bill, there are several areas requiring emphasis:

(1) First, there is evidence that the scientific workload, which generates much of the demand for computers, requires closer management control than is now exercised. Individual scientific experimenters create demands far in excess of capability which in turn invite increased purchase and rental costs.

While NASA contends that scientific data demands are subjected to rigid review and analysis, there is reason to believe that much more can be done toward this end.

(2) In the past, the costs of computer activities in NASA have not been readily identifiable in the annual authorization request. Computer costs are included in the R. & D., C. of F., and AO appropriations each year without specific reference. Special analyses such as the one prepared at the direction of this committee for fiscal year 1967 should become part of the annual authorization request in the future.

(3) Equipment utilization varies widely from center to center as does the cost per computer hour of operation for like items of equipment. The committee encourages NASA to study this matter with a view toward effecting more balanced use and cost factors.

The committee intends to continue to maintain close surveillance over automatic data processing activities within NASA. This matter has been designated as a subject of special inquiry during field visits and will be retained as an item of special committee interest during deliberations on future annual authorization requests.

Maintenance and Operations at Field Installations

Information derived from testimony received in conjunction with the fiscal year 1967 authorization bill and data collected during recent field visits reveal evidence of wide cost variations in the execution of like-type housekeeping functions at various NASA installations.

Structural maintenance of buildings varies from $0.39 to $2.20 per square foot per year. Maintenance of roads and improved grounds varies from $50.30 to $910 per acre per year. Custodial services vary from $0.21 to $0.47 per square foot of area subject to janitorial care per year.

While the committee recognizes that some variation in operating costs is due to regional influence, the extent of the cited variations appears unwarranted. Preliminary analysis reveals that variances other than those related to regional cost indices are attributable to: differences in cost accounting systems at various centers; the absence of agencywide maintenance standards and criteria; the lack of centralized policy guidance and coordination at the NASA headquarters level; varying degrees of emphasis placed on controlled maintenance costs at the center level; and poorly conceived and implemented preventive maintenance plans and schedules.

The committee notes that the newly activated Facilities Management Office at the NASA headquarters level has been specifically assigned the function of developing agency policies, criteria and operational practices in managing properties and installations, including specific reference to repairs, alterations, maintenance and operation of facilities. The committee urges that NASA assign a high priority to the facilities maintenance area in order to bring the matter into better management focus.

In the interim, the committee intends to keep this subject under continuing surveillance as a matter of NASA legislative oversight.

Calendar No. 1149

89TH CONGRESS, 2d Session | SENATE | Report No. 1184

NASA AUTHORIZATION FOR FISCAL YEAR 1967

REPORT

OF THE

COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES

ON

H.R. 14324

AN ACT TO AUTHORIZE APPROPRIATIONS TO THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION FOR RESEARCH AND DEVELOPMENT, CONSTRUCTION OF FACILITIES, AND ADMINISTRATIVE OPERATIONS, AND FOR OTHER PURPOSES

MAY 23, 1966.—Ordered to be printed

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CONGRESSIONAL ADJUSTMENTS TO NASA FISCAL YEAR 1967 REQUEST

Summary

	Budget request	House approved	Senate committee action
Research and development:			
Gemini	$40,600,000	$40,600,000	$40,600,000
Apollo	2,974,200,000	2,974,200,000	2,974,200,000
Advanced missions	8,000,000	8,000,000	8,000,000
Physics and astronomy	131,400,000	126,900,000	131,400,000
Lunar and planetary exploration	197,900,000	227,900,000	197,900,000
Bioscience	35,400,000	33,400,000	35,400,000
Meteorological satellites	43,600,000	43,600,000	43,600,000
Communications and applications technology satellites	26,400,000	26,400,000	26,400,000
Launch vehicle development	33,700,000	33,700,000	33,700,000
Launch vehicle procurement	152,000,000	132,000,000	152,000,000
Space vehicle systems	36,000,000	36,000,000	36,000,000
Electronics systems	36,800,000	36,800,000	36,800,000
Human factor systems	17,000,000	17,000,000	17,000,000
Basic research	24,000,000	23,000,000	23,000,000
Spacepower and electric propulsion systems	42,500,000	44,900,000	42,500,000
Nuclear rockets	53,000,000	53,000,000	53,000,000
Chemical propulsion	37,000,000	44,500,000	37,000,000
Aeronautics	33,000,000	35,000,000	35,000,000
Tracking and data acquisition	279,300,000	265,335,000	279,300,000
Sustaining university program	41,000,000	41,000,000	41,000,000
Technology utilization	4,800,000	5,000,000	4,800,000
Total	4,246,600,000	4,248,235,000	4,248,600,000

NASA AUTHORIZATION FOR FISCAL YEAR 1967

Summary—Continued

	Budget request	House approved	Senate committee action
Construction of facilities:			
Electronics Research Center	$10,000,000	$5,000,000	$10,000,000
Goddard Space Flight Center	710,000	710,000	710,000
Jet Propulsion Laboratory	350,000	350,000	350,000
John F. Kennedy Space Center	37,875,000	37,875,000	37,875,000
Langley Research Center	6,100,000	6,100,000	6,100,000
Lewis Research Center	16,000,000	16,000,000	16,000,000
Manned Spacecraft Center	13,800,000	13,800,000	12,800,000
Marshall Space Flight Center	581,000	deleted	581,000
Michoud Assembly Facility	700,000	700,000	700,000
Mississippi Test Facility	1,700,000	1,700,000	1,700,000
Wallops Station	205,000	205,000	205,000
Various locations	6,478,000	6,478,000	6,478,000
Facility planning and design	7,000,000	5,500,000	7,000,000
Total	101,500,000	94,419,000	100,500,000
Administrative Operations:			
Personnel compensation and personnel benefits			397,444,000
Other expenses			261,456,000
Total	663,900,000	644,210,150	658,900,000
Grand Total	5,012,000,000	4,986,864,150	5,008,000,000

PURPOSE OF THE BILL

The purpose of this bill is to authorize appropriations totaling $5,008,000,000 to the National Aeronautics and Space Administration for fiscal year 1967, as follows:

	Budget request	House approved	Senate committee action
Research and development	$4,246,600,000	$4,248,235,000	$4,248,600,000
Construction of facilities	101,500,000	94,419,000	100,500,000
Administrative operations	663,900,000	644,210,150	658,900,000

LEGISLATIVE HISTORY

The Administration's fiscal year 1967 budget request was introduced in the House under H.R. 12718 and in the Senate as S. 2909. After holding hearings, the House reported out a clean bill, H.R. 14324, which was subsequently passed on May 3, 1966, and referred to the Senate. The changes made by the Senate required additional amendments, and it was deemed desirable to report the House bill (H.R. 14324) with an amendment in the nature of a substitute.

SUMMARY

The original NASA budget request asked for a total of $5,012,000,000, of which $4,246,600,000 was for "Research and development"; $101,500,000 was for "Construction of facilities"; and $663,900,000 was for "Administrative operations." The House approved an authorization totaling $4,986,864,150, of which $4,248,235,000 was for "Research and development"; $94,419,000 for "Construction of facilities"; and $644,210,150 was for "Administrative operations."

NASA AUTHORIZATION FOR FISCAL YEAR 1967

Your Senate committee, after consideration of the bill, recommends an authorization totaling $5,008,000,000 for a total restoration of $21,135,850 over and above the amount approved for authorization by the House. Of this amount your committee recommends $4,248,600,000 for "Research and development" which represents an increase of $365,000 above the amount approved for authorization by the House; $100,500,000 for "Construction of facilities" which is $6,081,000 over the amount approved for authorization by the House; and $658,900,000 for "Administrative operations" which represents a restoration of $14,689,850 over the amount approved for authorization by the House. The reasoning accompanying the House reductions and Senate restorations is enumerated in this report under the various programs or items herein.

It is your committee's judgment that this request has been subjected to severe funding constraints by the executive branch. Your committee found that the budget requested represents a very carefully planned and balanced program at the minimum funding level needed to maintain our Aeronautics and Space program at the forefront of science and technology. Therefore, the major programs recommended by the executive branch are left intact.

Your committee has noted with increasing concern the NASA personnel growth and therefore is recommending a division of Administrative Operations into two categories to more properly identify the expenditures and to promote better control.

Your committee held hearings in connection with the NASA's authorization request on February 28 and March 1, 2, 3, 4, 1966. Subsequent to the hearings additional data on selected programs was requested from NASA and the National Academy of Sciences. The information received will be found in appendixes I and II.

On Wednesday, May 11, 1966, the committee met in executive session to prepare its recommendations to the Senate and mark up the bill.

RESEARCH AND DEVELOPMENT

Physics and Astronomy Program, $131,400,000

Supporting research and technology advanced studies

The House reduced the NASA request of $22.9 million by $3 million to make additional funds available for Martian exploration. In view of the significance of these funds to the physics and astronomy program, your committee does not believe it is prudent to divert such funds to hardware activity in another program. Therefore, your committee recommends full restoration of the House reduction to assure continuation of an adequate supporting research and technology effort for this program.

Astronomical observatories

In view of the failure of the first OAO flight and the importance of good hardware development to successful mission performance, your committee endorses the appointment, by NASA, of a group to undertake an intensive failure analysis and determine the extent of corrective action necessary to eliminate such deficiences in subsequent flights. Your committee further recommends deferral of activity for the fifth mission and concentration on improving basic spacecraft performance until this is reasonably assured. Following this your committee believes that NASA should have the flexibility to proceed with the fifth spacecraft or to place additional effort on the current program whichever, in the final analysis, will provide the greatest return from this program. On this basis your committee recommends that the House reduction of $1.5 million be restored.

It has been suggested that certain experiments proposed for the Apollo applications program (AAP), specifically the Apollo telescope mount (ATM), might duplicate certain of the proposed OAO experiments. Your committee has reviewed this carefully and determined that there would be no duplication if the AAP ATM were approved and initiated for flight in the 1969–70 time frame. One of the significant features of the OAO is that it is designed to provide for long-term repetitive observations of items of astronomical interest whereas the ATM would allow manned observation of a variety of items of specific interest for short periods of time.

Lunar and Planetary Program, $197,900,000

Surveyor

The committee noted that the first Surveyor launch has experienced an additional delay of several months due to technical problems identified during the ground test program. Further, it has been noted that the program has been redefined to seven engineering units, rather than the four previously contemplated, and three operational units in order to reduce the complexity of the initial spacecraft in the interest of expediting the return of basic lunar surface data. The continued need for this program was reviewed, and your committee is convinced of its importance to assure the success of the manned lunar landing and accordingly supports the program up to and including the 10 flights presently planned—7 engineering spacecraft and 3 operational spacecraft. However, the committee requests that NASA give this program priority attention to prevent further schedule slippages and cost increases, and also study the program carefully to ascertain what experience can be extracted that could be applied to assure more timely and efficient accomplishment of future programs.

Mariner

Your committee, in August 1965, held hearings on national space goals for the post-Apollo period [1] during which members of the National Academy of Sciences and its Space Science Board urged further investigation of the planet Venus which had not been included in the near-term planetary program since data from Mariner II, the successful 1962 Venus flyby, indicated that this planet had characteristics which were extremely hostile to forms of life. Subsequently, however, there has developed a body of scientific opinion that the extremely high temperature reported from Venus might not be from the Venusian surface temperature, or be less than indicated, and, therefore, further examination of this planet was recommended strongly by scientific witnesses.

Your committee believes that the proposed 1967 Mariner Venus mission which, along with other possible alternative uses for the spare Mariner spacecraft, has been under study by NASA for some time, is most important to the overall space program since it will attempt to resolve differences in scientific opinion as to certain fundamental characteristics of the planet, which in turn is basic to planetary long-range program planning, i.e., should Venus be identified for detailed investigation in the planetary exploration program or should efforts be concentrated on other planets? It is of interest to note that the USSR launched two probes to Venus during the last launch window.

The current NASA plan also includes two Mariner Mars missions during the 1969 launch opportunity. These flights would include new and additional experiments not on the 1964 Mariner IV spacecraft and would be launched by the Atlas-Centaur vehicle which provides more payload capability than the Atas-Agena used on the earlier 1964 mission. The 1969 missions would provide data confirming that of Mariner IV and provide additional information on the planet which, in addition to being of scientific value, would validate design decisions on the 1973 Voyager spacecraft which by that time would have progressed well into the hardware fabrication stage. Your committee concurs in the NASA plan to utilize the less complex Mariner-type spacecraft to obtain fundamental data on this planet during this launch opportunity. Admittedly, these flights directly result from Voyager budget constraints; however, NASA witnesses have testified that, after initiation of the Voyager program, they had hoped also to be able to take advantage of the 1969 opportunity with Mariner spacecraft.

Your committee, as stated above, fully supports the introduction of the 1967 Venus mission in the NASA planetary program and feels that additional investigation of this planet is a prerequisite to establishing the longer range planetary program plans. Your committee does not disagree with the House that an atmospheric probe on the 1969 Mariner flyby should provide more accurate data on the Martian atmosphere, and further, it agrees, in principle, that more refined data, if it were available at an earlier date, should be beneficial to the design of future spacecraft, particularly when they approach the size and sophistication of the proposed Voyager planetary craft. However, your committee has examined this matter very carefully and is persuaded that a probe cannot, at this late date, be introduced into the program and still assure that an adequately designed and tested spacecraft will be ready for the 1969 Mars launch opportunity. In view of this, and because of the facts that: (1) The 1973 Voyager spacecraft will be in very advanced stages by the time the 1969 Mariner data is received, thereby severely limiting the useful application of any more refined data: (2) confirming data, in addition to that already available, for the Voyager design would be obtained from the spacecraft without the probe; and (3) we are in a very elemental phase of Mars exploration which does not actually permit, because of the many unknowns, the really efficient design of Voyager, your committee does not concur in the House proposal to add $20 million to the Mariner program in fiscal year 1967 to provide for the addition of an atmospheric probe to the 1969 Mars flyby mission.

Voyager

Your committee recognizes that NASA has encountered technical problems in certain of its unmanned spacecraft programs and that probably some of these could have been minimized if more adequate program definition, planning, and problem identification had been undertaken. In addition your committee believes that the maximum investigation prior to undertaking hardware procurement will contribute materially to a more successful and economical program. However, the present program plan does provide additional time even with the deferral of the total system design start until April 1968 and therefore your committee does not concur with the addition of $22 million to this program. In addition, the funds to be added would be obtained from other space science and applications programs and your committee is most concerned about disturbing what it believes to be a carefully worked out balance among the several programs in the OSSA. Particularly your committee is concerned about the transfer of funds from supporting research and technology because of the role that these funds play in providing a sound base for undertaking future programs.

With regard to the planetary exploration program your committee urges NASA to carefully review the use of smaller, lighter, less sophisticated and consequently less expensive spacecraft for planetary missions as recommended in the "Van Allen Report" to the Space Science Board, National Academy of Sciences. Specific goals with respect to planetary exploration might elicit from our engineers and scientists experiments to attain such goals that do not require spacecraft of the size and complexity of the Voyager.

The committee is concerned that the first flights of large complex unmanned spacecraft so often fail. The component failure in the recently launched Orbiting Astronomical Observatory (OAO–A) resulting in no useful data being returned has not gone unnoticed. Yet the Voyager spacecraft will be larger and a much more complex one than the OAO. Furthermore, portions of the Voyager spacecraft must be sterilized, which introduces an added factor affecting spacecraft reliability.

Your committee believes that NASA should make every effort to get planetary information by less expensive means before embarking on an unmanned spacecraft as sophisticated as Voyager.

Pioneer

The Space Science Board, National Academy of Sciences, recommended, in their report "Space Research Directions for the Future," a broad program of planetary exploration. In April, the Board's Executive Committee recommended that in addition to the NASA proposed programs using Mariner-class systems, a program of small planetary probes as proposed in the "Van Allen Report" (see app. II) be initiated. Pioneer is a spacecraft of proven design capable of making measurements of the planetary environment in the vicinity of some of the planets at an estimated cost of $15 million per mission. The committee encourages NASA to examine the use of such small unsophisticated spacecraft for planetary missions during the launch opportunities available in 1968 and through the early 1970's. If, after that examination, NASA finds that missions using spacecraft systems smaller than those now programed (Mariner) or contemplated (Voyager) will supply useful planetary information, then the committee would have no objection if during fiscal year 1967 not more than $5 million were reprogramed to undertake such missions.

COMMUNICATION AND APPLICATIONS TECHNOLOGY SATELLITES PROGRAM, $26,400,000

Supporting research and technology/advanced studies

Your committee has followed with interest the possible development of a global navigation satellite or navigation/traffic control satellite system. In September 1964, a Joint Navigation Satellite Committee, composed of NASA, Interior, Treasury, Defense, Commerce and FAA, was formed to study this problem for its technical and economic feasibility and to recommend an organization and course of action to the participating agencies. Early last year, a report of this ad hoc committee was anticipated by July 1965. By the time of the fiscal year 1966 NASA authorization hearings, the expected date had slipped to December 1965. Your committee, in reporting the NASA authorization bill for 1966 to the Senate, requested:

> * * * that 30 days after the submission of the Joint Navigation Satellite Committee's report to the agency heads, but not later than January 30, 1966, NASA report to the Congress on whether any steps are being taken to establish a uniform national policy toward a global navigation satellite system.

On February 7, 1966, NASA replied stating, in effect, that the work had not been completed. In testimony before the committee on March 2, 1966, Dr. Homer Newell said that the Joint Navigation Satellite Committee report would be issued in March. As of mid-May, however, the report has still not been made available to this committee, and there is little indication that any steps whatever have been taken to establish a national policy in this promising new area of space technology.

Your committee will continue to monitor this matter with the hope that the Joint Navigation Satellite Committee will determine and evaluate the requirements and cost for a satellite system to meet future demands in air and sea navigation, traffic control, emergency and rescue activities and related matters and would hope that the ad hoc committee's basic report is completed soon.

SPACE POWER AND ELECTRIC PROPULSION SYSTEMS PROGRAM, $42,500,000

SNAP–8 development

The House added $2.4 million to the NASA fiscal year 1967 request for the Snap-8 development program for additional component testing. Your committee appreciates the general desirability of separate component testing particularly if trouble items develop; however, the NASA budget request is judged adequate to support the fiscal year 1967 portion of the 10,000-hour system endurance test which is currently the principal Snap-8 objective. Also, since the overall space power program contains $37 million for supporting research and technology, your committee believes adequate provision exists to support any vital component testing deemed necessary outside of the system test loop. Therefore, the committee recommends authorization of the Snap-8 project at the $5.5 level as presented in the budget request.

CHEMICAL PROPULSION PROGRAM, $37,000,000

Your committee is convinced that NASA must conduct research programs that will provide an adequate base for future propulsion needs even though such needs may not be currently identified. In so doing, however, the committee expects that NASA will make continuous reviews of its research efforts to assure that the most advanced concepts are being pursued at an economical rate consistent with an effective technical return, and that projects will be terminated if, after thorough technical evaluation, it is determined more productive areas of investigation exist.

In view of the NASA review of and present plans for its liquid hydrogen-oxygen high-energy program, the committee interposes no objection to utilizing remaining M–1 program funds to support the more advanced engine concepts. Full coordination and integration with the DOD effort in this research area is expected.

Large solid motor project

Your committee recommends continuing this program at the minimum feasible technical level to assure that the technology of large solid motors is logically and fully explored. This will insure that oft-stated advantages of solid motors are not overlooked as the space program progresses, and that after booster vehicle needs become clearer the Nation will be in a position to make logical choices of vehicles offering the most effective combination of efficiency, economy, and overall effectiveness for a particular application. However, in view of the currently developed family of launch vehicles available for NASA and DOD applications as visualized through 1975 and the fact that there is no stated application for a full-length, 260-inch motor, your committee does not, at this time, recommend increased funding for this program for a full-length, 260-inch firing during fiscal year 1967. Rather it believes that, as indicated above, it should be conducted at a minimum efficient technical level until such time as the technology and a clearer indication of booster needs indicates we should move toward a full-length demonstration firing.

The House has added $7.5 million to the fiscal year 1967 request to provide for immediately undertaking a long case (but not a full-length case) 260-inch solid motor firing by December 1967 by welding together the two existing half-length cases. In view of the weld difficulties that have been encountered in case fabrication in this program, your committee is concerned as to the feasibility of this approach and believes that it introduces an element of risk that could materially affect the overall program. In addition one of the significant steps in the program, the initial test of a large nozzle, can be conducted much more economically through an additional half-length firing. For the several reasons stated above your committee does not concur with the House addition of $7.5 million, and recommends that this program be conducted at the level recommended by NASA in accordance with the objectives for extending large solid motor technology.

Aeronautics Program, $35,000,000

The House has added $2 million to the $33 million NASA fiscal year 1967 request for aeronautics indicating these funds should be used in the areas of noise reduction, V/STOL aircraft and the supersonic transport. As a result of its review of the total aeronautics program, and particularly in view of the President's March 2, 1966, message to Congress recommending the establishment of a Department of Transportation which emphasized priority attention to aircraft noise problems, and recent recommendations of the Jet Aircraft Noise Panel of the Office of Science and Technology, your committee concurs with the addition of $2 million to this program with the understanding that NASA apply it to increased effort on noise research

During the past year, an extensive staff study on aeronautical research and development has been in preparation to help evaluate the Nation's capabilities, goals, and policy; the importance of aeronautics to the economy; the process of research, development and operation; and the roles of industry and various Government agencies with particular emphasis on NASA. This study will be published as Sen. Document No. 90 and will help determine the basis for further committee action.

Tracking and Data Acquisition Program, $279,300,000

The House reduced this program $13,965,000 on the basis that it was not convinced that the full amount requested is needed for network operations since this program has consistently failed to utilize its full authorization. Your committee believes that the current phase of tracking and data acquisition activity necessitates a great deal of flexibility if it is to satisfactorily support the flight programs particularly in the absence of sound operating experience with the newly added facilities. In addition, this program by its nature is a support activity and must be responsive to the NASA mission activities it supports, much of which it must respond to, but is not in a position to control.

Your committee has examined the annual budget requests for the 3 prior fiscal years for tracking and data acquisition functions and the agency's performance against the annual authorizations. This examination reflects the support nature of this program inasmuch as the total funds eventually required (and made available through reprograming) during this period exceed the total congressional authorization for R. & D. and C. of F. by about $30 million and are within $2.2 million of the total amount requested. Your committee noted that although there have been variations between operations, equipment and the construction of facilities budget estimates and performance, the total variance is quite small.

Based upon these factors your committee recommends approval of the full amount requested by NASA and, therefore, restoration of the House cut.

CONSTRUCTION OF FACILITIES

Summary

	Budget request	House approved	Senate committee action
A. Electronics Research Center	$10,000,000	$5,000,000	$10,000,000
B. Goddard Space Flight Center	710,000	710,000	710,000
C. Jet Propulsion Laboratory	350,000	350,000	350,000
D. John F. Kennedy Space Center	37,876,000	37,876,000	37,876,000
E. Langley Research Center	6,100,000	6,100,000	6,100,000
F. Lewis Research Center	16,000,000	16,000,000	16,000,000
G. Manned Spacecraft Center	13,800,000	13,800,000	12,800,000
H. Marshall Space Flight Center	581,000	Deleted	581,000
I. Michoud Assembly Facility	700,000	700,000	700,000
J. Mississippi Test Facility	1,700,000	1,700,000	1,700,000
K. Wallops Station	205,000	205,000	205,000
L. Various locations	6,478,000	6,478,000	6,478,000
M. Facility planning and design	7,000,000	5,500,000	7,000,000
Total	101,500,000	94,419,000	100,500,000

A. Electronics Research Center, $10,000,000

Your committee reviewed the NASA site acquisition, facility design, and construction schedules for the Electronics Research Center in depth during its authorization hearings. It is believed that recent actions, in site acquisition and facility design activities, are evidence that the current NASA schedules are realistic. More specifically, your committee noted that: (1) NASA, on April 14, 1966, formally acknowledged its agreement with the final draft of the land disposition contract, including land delivery schedules established therein, presented by the Cambridge Redevelopment Authority (CRA) and indicated its readiness to execute the contract when prepared in final form; (2) all land required for fiscal year 1965, fiscal year 1966, and the proposed fiscal year 1967 facilities now belongs to the CRA; (3) demolition has been completed on the first tract and this tract is available for transfer to NASA as soon as the contract is formally executed; (4) demolition work is in progress on the second tract to be delivered to NASA by September 15, 1966, at the latest; (5) that part of the third tract required for fiscal year 1967 facilities has a target delivery date of December 1966, with a final date of January 15 1967; and (6) final facility design work is either under contract or will be in the immediate future (including that for fiscal year 1967 facilities) so that construction contracts can be awarded when the land is delivered. Therefore, unless some unforeseen complication should arise that would delay execution of the site acquisition contract thereby formalizing the tract delivery dates established therein, your committee has reasonable assurance that the full fiscal year 1967 request of $10 million is necessary to support an orderly construction of facilities program for this center.

The House reduced the NASA request by $5 million on the basis that site acquisition delays and unused construction funds from prior years would not permit NASA to fully utilize its fiscal year 1967 request. Your committee recommends restoration of this amount for the reasons set forth above.

Manned Spacecraft Center, $12,800,000

Lunar sample receiving laboratory, $8,100,000

Your committee believes that appropriate precautions should be taken to assure that possible contaminants from the Moon are not introduced onto Earth, and therefore, it agrees, in principle, with the need for facilities to examine and control, to the extent deemed necessary, lunar materials and personnel and equipment exposed to the lunar environment to prevent such contamination. It is recognized that certain aspects of these facilities must, of necessity, be somewhat specialized, however, the committee believes the sensitive or controlled areas should be held to a minimum pending a more positive determination of the problems and the need involved. Further, other aspects of this project are not unlike many other materials functions involving recording, packaging, distributing, etc., which can be conducted in conventional facilities. In view of these considerations, and since the facility is in preliminary design stages, your committee believes the overall proposal should be reviewed carefully to assure that only the minimum specialized facilities are being provided and that all other supporting space, as presently proposed, is absolutely required. Supporting space and facilities not absolutely necessary should be eliminated and the remainder should be provided in a most economical manner consistent with efficient accomplishment of the function to be performed. In accordance with these views your committee is recommending approval of this laboratory with a $1 million reduction in the NASA request to assure careful review and positive control of the planning for and construction of these facilities.

Marshall Space Flight Center, $581,000

Your committee is impressed by the increased understanding of our launch vehicles and the improvement in systems design which has been achieved in recent years and which was recently evidenced by the ability, after two ignitions and shutdowns, to successfully launch the first OAO flight. A few months prior, reliable instrumentation played a key role in preventing a serious situation during the Gemini VI launch attempt on December 12, 1965. Therefore your committee believes that improvements in instrumentation and sensors are so important to understanding and to assuring the maximum reliability that work in this area is directly applicable to present as well as any future launch vehicles.

In addition, the present facilities are either nonexistent, temporary, or inadequate for handling hazardous materials and conducting the types of tests associated with the development of the improved instrumentation and sensors. Hazards originate from fuels, high pressures, and temperatures. This project will provide test cells so that certain test operations can be completely removed from the laboratory and/or from facilities of substandard design and transferred to facilities of appropriate design for such operations. For the reasons indicated above your committee believes the NASA request for the hazardous operations laboratory addition is fully justified and therefore recommends the restoration of the full amount, $581,000, for this facility.

Facility Planning and Design, $7,000,000

The House reduced the NASA request of $7 million to $5.5 million, principally because of its concern over the large balance of unfunded authorization available for this item from previous years. Your committee appreciates the House concern for the accumulated, unfunded authorization, the largest portion of which is carried from fiscal year 1964; however, an amendment to the National Aeronautics and Space Act provides that this will expire at the end of 3 fiscal years and, therefore, as a practical matter, NASA has little time within which to obtain funds and actually utilize this authorization.

Your committee in fiscal year 1966 recommended, and the Congress authorized, $5 million for facility planning and design activities on the basis that this was a reasonable amount commensurate with the general construction requirements envisioned in the foreseeable future. In view of NASA's identification of $2 million for design work for the NERVA engine/stage test complex and the other considerations mentioned herein, your committee recommends the full amount of the NASA request with the understanding that $2 million is allocated specifically for the NERVA work, which your committee believes should receive increased attention.

ADMINISTRATIVE OPERATIONS

Summary

Object classification	Budget request	House approved	Senate committee action
Personnel compensation and personnel benefits:			
Personnel compensation	$375,354,000		
Personnel benefits	27,090,000		
Total	402,444,000		$397,444,000
Other Expenses:			
Travel and transportation of persons	21,279,000		
Transportation of things	5,048,000		
Rents, communications, and utilities	56,417,000		
Printing and reproduction	4,916,000		
Other services	127,538,000		
Supplies and materials	26,122,000		
Equipment	14,696,000		
Lands and structures	5,408,000		
Insurance claims and indemnities	32,000		
Total	261,456,000		261,456,000
Total—Administrative Operations	663,900,000	$644,210,150	658,900,000

For fiscal year 1966 the Congress reduced NASA's administrative operations authorization request $18.4 million without specific assignment of the reduction to any of the classifications in Administrative Operations; however, your committe recommended that NASA seek economies in manpower utilization as well as in the other classifications of the administrative operations account.

In reviewing fiscal year 1966 budget performance, it was noted that any congressional reductions aside, NASA for the second consecutive year has exceeded its own budget projections of personnel costs and has effected reductions in the other objects of administrative operations to meet these increases. NASA attributes the increases to Federal salary actions with which the committee agrees in part; however, your committee is increasingly concerned about the continued growth in the number and grade level of direct NASA personnel, except at the ERC, and the increase in average salary particularly when the flexibility your committee has supported in AO appears to be applied to enhancing this growth. Further, there continues to be significant differences between the budget projections of average salary (other than that accounted for by the Federal pay increase), the number of higher grade positions, and the average GS grade level, and comparable performance data as reflected in the subsequent fiscal year budget plan. NASA attributes these increases to position releases and grade levels approved by the Bureau of the Budget subsequent to the presentation of the annual budget to the Congress. The committee is not convinced that this is justification for not adhering reasonably close to the personnel projections which NASA presents to the Congress. It appears that NASA either is unable to reasonably estimate its needs during the budget process or is unable to control growth within the organizational structure. Your committee believes that the Congress is entitled to receive realistic estimates of the NASA operating plans so that it can make appropriate judgments thereon rather than to experience continual upward adjustments in personnel operations made after congressional action on the fiscal year request. Therefore, your committee recommends that NASA undertake further review of its personnel requirements including both total numbers and grade level to assure that these are within reasonable expectations of what is required to accomplish the program. This should be undertaken in the light of the maturity which many programs have achieved, the need for fiscal conservatism, the fact that no new large programs have been initiated and the policy of utilizing contracts to accomplish many aspects of NASA's programs.

With respect to classifications other than personnel, fiscal year 1966 reflects a reduction in materials and equipment procurement and several contract funding adjustments within the other services classification to support the increased personnel costs discussed above, to support operational cost increases particularly at the John F. Kennedy Space Center, and in the final analysis to remain within the total congressional authorization. Examination of these adjustments indicates that there might have been some weaknesses in the ability to forecast needs reasonably accurately and therefore, NASA should examine its internal procedures to assure that adequate as well as reasonably accurate estimates are submitted. Further, the committee is not impressed with the extent to which contract funding adjustments have been used in fiscal year 1966 since they do not reflect economies or recognition of limitations on expenditures, but in fact, are merely deferral of funding until receipt of subsequent fiscal year funds.

The fiscal year 1967 NASA administrative operations request reflects a $21.6 million increase in personnel costs and a $30.4 million increase in all other object classification costs above the current estimate for fiscal year 1966. The personnel cost increase will be used to support expected growth at the Electronics Research Center (ERC), additional man-years in support of manned space flight operations, the full year impact of the 1965 Federal pay increase, and structural changes in the personnel complement. In the other classifications the principal increase results from additional space rental at the ERC, increased computer rentals at several centers, and utility and service contract cost increases at installations achieving full operational status particularly the Kennedy Space Center. Except for the effect of the 1965 Federal salary increase and the ERC growth, there are no significant increases in the Offices of Space Science and Applications and Advanced Research and Technology.

The critical comment which your committee has of NASA's administration of the administrative operations account reflects an in depth review of the fiscal year 1967 request. It is the committee's judgment that those facilities and personnel assigned to the Office of Space Science and Applications and to the Office of Advanced Research and Technology have been tightly controlled in personnel and supporting expenditures. In fact, the committee is concerned that any real flexibility in these two areas might have been sacrificed to the needs of the Office of Manned Space Flight. Particularly with respect to the Office of Advanced Research and Technology where personnel costs account for 70 percent of the administrative operations budget, it is recognized that the research efforts upon which the future programs rest is basically an "in house" rather than a contract operation, and even the contract work is weighted heavily toward research effort rather than to hardware activity. OART Centers, except for the ERC, reflect no personnel increases during the 3-year budget period fiscal years 1965–67. Therefore, severe financial reductions and restrictions in this area are more likely to have an immediate and more telling impact on research—specifically on personnel engaged in space research, and on the support necessary for their effectiveness—rather than on administrative management or engineering administration functions which could be the case where large amounts of funds are contracted out for hardware procurement or operating supplies. These circumstances reduce the built-in flexibility to make modest adjustments to changing conditions encountered during the fiscal year. Similarly the OART facilities are at a state of maturity which enables forecasting of the support costs with a high degree of accuracy. In addition, recognition must be given to staffing and support for those new facilities (actually research tools) recently authorized by the Congress if they are to make an effective contribution to research programs. For these reasons, your committee believes that, in its judgment, it is extremely difficult to effect any reduction in the OART administrative operations budget, and does not concur in the $9,448,850 reduction made by the House.

The Electronics Research Center is actively recruiting key personnel to formulate and initiate the ERC's basic research programs. This Center has been very successful in attracting individuals recognized for their outstanding work in their respective disciplines as well as maintaining its recruitment program very close to established goals, and as the staff is increased, the necessary supporting facilities, services, supplies, and equipment must be available to assure effective utilization of this talent. Concurrently, the funding requirements of other classifications should be expected to increase. Within the OART reduction the House assessed a specific ceiling of $14,385,850 on the ERC representing a 5-percent cut in the NASA request. Your committee does not concur in this specific reduction or a ceiling imposed against the ERC since these would reduce the effectiveness of the ERC and further reduce overall OART flexibility.

The Office of Space Science and Applications also has very limited flexibility in allocating its administrative operations resources since it has only two field operations assigned to it. Neither of these reflect any personnel additions attributable to space science or applications programs and your committee believes the budget request is reasonable although it is expected that the NASA management will continue to search for and introduce economies in manpower utilization and support activities. The House reduced the OSSA administrative operations request $3.5 million. In view of the factors discussed herein, your committee recommends that this reduction be restored in full.

Except for the ERC, personnel increases in fiscal year 1966 and projected for fiscal year 1967 are in the manned space flight programs or directly supporting activities. These programs also make extensive utilization of support contracts in both administrative operations and research and development activities. In fact, the manned space flight centers account for approximately 80 percent of the NASA administrative operations support personnel and 73 percent of R. & D. support personnel. Your committee recognizes the complexities of the manned space flight program. It also appreciates that certain aspects of the approved programs tend to decrease as other elements increase and these facts combined with the flexibility which is inherent in, and the advantages thereby accruing from, the use of support contracts indicates that more stringent management practices should be instituted to assure that the most efficient manpower utilization is being effected.

The House cut $6,741,000 from selected classifications (other than personnel) to enforce austerity in internal operations at the manned space flight centers. Your committee is not persuaded that there is a clear-cut distinction between NASA direct and contractor support expenditures, or between certain contractor R. & D. and AO expenditures. Therefore it believes that NASA should have some flexibility to organize support activities whether direct or contractor, or within the R. & D. or the AO appropriations, to achieve the most efficient and economical operation. In view of the realities of this situation therefore, your committee does not concur in the reduction by the House as directed and limited to the five object classifications (transportation of things, printing and reproduction, supplies and materials, equipment and land and structures).

After extensive consideration of the several factors influencing the total administrative operations budget which have been discussed herein, your committee is making several specific recommendations with respect to the AO budget. These are:

(1) Establish, for authorization purposes, two categories within administrative operations: (*a*) personnel compensation and personnel benefits and (*b*) classifications other than personnel compensation and personnel benefits.

(2) Effect a $5 million reduction to be applied to personnel compensation and personnel benefits in manned space flight activities with no part of this to be assessed against the programs of the Offices of Space Science and Applications and Advanced Research and Technology.

(3) Including the $5 million reduction, establish a $397,444,000 ceiling on personnel compensation and personnel benefits provided however that NASA may, after thorough consideration of the factors discussed herein, increase this amount by not more than 1 percent or $3,974,440 by transfer from any other funds appropriated pursuant to the act.

(4) Establish a ceiling of $261,456,000 for the classifications, other than personnel compensation and personnel benefits, with the flexibility to transfer an amount not to exceed 10 percent of such amount from any other funds appropriated pursuant to the act.

LEGISLATIVE CHANGES

(1) Section 1(c) of H.R. 14324 authorizes the amount for the "Administrative operations" of NASA. The Administration request for fiscal 1967 was for a lump sum of $663,900,000. The House cut this amount by $19,689,850. Your committee has recommended a restoration of all of the Administration's request except for $5 million and has authorized a total of $658,900,000 broken into two categories—$397,444,000 for "Personnel compensation and personnel benefits" and $261,456,000 for "Other expenses."

Your committee further recommends in subsections (b) and (c) of section 3 that not to exceed an amount equal to 1 percent of the funds appropriated pursuant to "Personnel compensation and personnel benefits" may be transferred into that category from any other funds appropriated pursuant to the act, and that not to exceed an amount equal to 10 percent of the funds appropriated pursuant to "Other expenses" may be transferred into that category from any other funds appropriated pursuant to the act. No portion of the amounts transferred into either category may be obligated for expenditure or expended unless a period of 30 days has passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate, and to the Space Committees of the House and Senate, a written report containing a full and complete statement concerning the need for such a transfer.

(2)NASA in its fiscal year 1967 authorization request requested a transfer authority of 1 percent, an increase of one-half percent; however, based upon the justification furnished by NASA in support of its request and a review of research and development program status, your committee is not persuaded that there now exists a basis for departing from the one-half of 1 percent authority established in fiscal year 1966. The House, in its action, has approved a continuation of the one-half of 1 percent limitation for fiscal year 1967—your committee concurs in that action.

(3) The National Aeronautics and Space Act of 1958 makes the National Aeronautics and Space Administration subject to the general procurement practices of the Department of Defense as established by 10 U.S.C. 2301–2314. Section 2306(d), among other things, establishes a limitation of 6 percent of the estimated facility construction cost on the combined cost and fee for a cost-plus-a-fixed-fee contract for architect-engineer (A–E) services. For practical purposes, this also establishes an equivalent limitation on total fee for a fixed-price architect-engineer contract.

NASA in section 5 of the Administration's proposal requested an amendment to the National Aeronautics and Space Act of 1958 that would exempt the agency from the 6-percent limitation. The agency's request would give the Administrator the authority, when he determined it to be necessary, to enter into architect-engineer contracts for highly complex research and development facilities without regard to the statutory limitation imposed by 10 U.S.C. 2306(d).

The NASA request was generated by a General Accounting Office audit of a single facility construction project which found that NASA in its contract for A–E services exceeded the 6-percent limitation.

Your committee studied this situation and the architect-engineer contracting policy and procedures developed and implemented by the DOD over a period of years; and it is probable in the final analysis that the basic problem here is one of lack of uniform interpretation and definition throughout the Government.

The committee believes it is most important and proper for Government agencies to undertake consistent interpretations and implementation to assure uniform application of pertinent statutes.

The committee recognizes the technical complexities in the construction of many of the NASA facility projects, but it is not convinced that these complexities exceed those which the DOD experiences in its construction programs for its research and development programs of an equivalent magnitude. There is, in fact, no evidence at all that the DOD has encountered problems in A–E work for its own account or in the large amount of A–E work it has undertaken for NASA.

The committee is not persuaded on the basis of the facts available that a specific exemption, as proposed in the Administration's bill, is warranted. Neither does the committee feel it necessary to grant such an exemption for a year as proposed by the House in its rewriting of the section, and accordingly recommends that such language be stricken.

Your committee, as does the House committee, believes that a government-wide review should be made to determine the consistency with which uniform interpretations, definitions, and implementations are being made in all aspects of the procurement of architect and engineering services. Accordingly, your committee requests the Director of the Bureau of the Budget, rather than the Comptroller General as proposed in report language by the Committee on Science and Astronautics of the House, to conduct a survey to determine the extent to which inconsistencies exist in the practices of executive departments and other agencies of the Government, in the interpretation and application of statutory provisions which limit the extent to which payment may be made for architectural or engineering services for public works or public utility projects and report to the Congress not later than March 1, 1967, his findings together with any recommendation for such legislation as he may deem necessary or desirable to provide uniformity in such practices.

Pending such report your committee strongly recommends that NASA review its A–E contracting policies and procedures with those of the DOD to assure that uniform interpretations and consistent applications of public policies on A–E contracts are now being effected, and that architect-engineer services be contracted for in such a manner that NASA's practices and procedures are consistent with contracts of a like kind entered into by the Department of Defense.

(4) The House added a section 6 to the Administration proposal. This section repeated the language contained in the Authorization Act for fiscal year 1966 that it was the sense of the Congress that consideration be given to a geographical distribution of Federal research funds whenever feasible, and NASA should explore ways and means of distributing its research and development funds whenever feasible. Your committee concurs in this action and has recommended that this language be included as section 5 of the Senate amendment.

(5) The Administration proposal includes several requirements for reports and notifications of NASA's actions to be filed with the Space Committees of the Congress. The House has added language this year in each of the places requiring such reports and notifications that such reports and notifications should be sent to the Speaker of the House of Representatives and to the President of the Senate as well as to the respective committees. Your committee concurs in this action and has included this language in its amendment.

89TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } { No. 1748

NASA AUTHORIZATION FOR FISCAL YEAR 1967

JULY 20, 1966.—Ordered to be printed

Mr. MILLER, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany H.R. 14324]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 14324) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and administrative operations, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment insert the following: *That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration the sum of $5,000,419,000, as follows:*

(a) For "Research and development," $4,248,600,000, for the following programs:

(1) Gemini, $40,600,000:
(2) Apollo, $2,974,200,000;
(3) Advanced missions, $8,000,000;
(4) Physics and astronomy, $129,900,000;
(5) Lunar and planetary exploration, $210,900,000;
(6) Bioscience, $35,400,000;
(7) Meteorological satellites, $43,600,000;
(8) Communication and applications technology satellites, $26,400,000;
(9) Launch vehicle development, $33,700,000;
(10) Launch vehicle procurement, $142,750,000;
(11) Space vehicle systems, $36,000,000;
(12) Electronics systems, $36,800,000;
(13) Human factor systems, $17,000,000;

(14) Basic research, $23,000,000;
(15) Space power and electric propulsion systems, $44,500,000:
(16) Nuclear rockets, $53,000,000;
(17) Chemical propulsion, $41,000,000;
(18) Aeronautics, $35,000,000;
(19) Tracking and data acquisition, $270,850,000;
(20) Sustaining university program, $41,000,000;
(21) Technology utilization, $5,000,000

(b) For "Construction of facilities," including land acquisitions, $95,919,000, as follows:

(1) Electronics Research Center, Cambridge, Massachusetts, $7,500,000;
(2) Goddard Space Flight Center, Greenbelt, Maryland, $710,000;
(3) Jet Propulsion Laboratory, Pasadena, California, $350,000;
(4) John F. Kennedy Space Center, NASA, Kennedy Space Center, Florida, $37,876,000;
(5) Langley Research Center, Hampton, Virginia, $6,100,000;
(6) Lewis Research Center, Cleveland and Sandusky, Ohio, $16,000,000;
(7) Manned Spacecraft Center, Houston, Texas, $12,800,000;
(8) Michoud Assembly Facility, New Orleans and Slidell, Louisiana, $700,000;
(9) Mississippi Test Facility, Mississippi, $1,700,000;
(10) Wallops Station, Wallops Island, Virginia, $205,000;
(11) Various locations, $6,478,000;
(12) Facility planning and design not otherwise provided for, $5,500,000.

(c) For "Administrative operations," $655,900,000.

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JOSEPH KARTH,
KEN HECHLER,
EMILIO Q. DADDARIO,
JOSEPH W. MARTIN, Jr.,
JAMES G. FULTON,
CHARLES A. MOSHER,
Managers on the Part of the House.

CLINTON P. ANDERSON,
STUART SYMINGTON,
JOHN C. STENNIS,
MARGARET CHASE SMITH,
LEN B. JORDAN,
Managers on the Part of the Senate.

RESEARCH AND DEVELOPMENT

Lunar and Planetary Program

NASA requested a total of $197,900,000 for the Lunar and Planetary Program. The House increased this request by a net amount of $30,000,000. An additional $22,000,000 was designated for the Voyager project, and a net increase of $8,000,000 was earmarked for the Mariner project. The $8,000,000 increase in Mariner represented a reduction of $12,000,000 by elimination of the 1967 Venus mission, and an increase of $20,000,000 for initiation of development of an instrumented probe to be incorporated in the 1969 Mars Mariner spacecraft.

Regarding the House increase of $22,000,000 over and above the NASA request of $10,000,000 for the Voyager program, the House took the position that the expenditure of relatively modest amounts of additional money in fundamental preliminary work during these early years would contribute to the success of the project and could save vastly larger sums during the period of hardware procurement toward the end of this decade.

The Senate restored the authorization for Voyager to the amount of the original NASA request, i.e., $10,000,000.

In view of the magnitude and complexity of the Voyager undertaking, however, and the desirability of making the best use of the additional time now available, the managers on the part of the Senate receded and agreed to a $13,000,000 increase above the NASA request. Accordingly, NASA is authorized a total of $23,000,000 for the Voyager project in FY 1967.

Regarding the Mariner Project, the House declined to authorize the 1967 mission to Venus on grounds that it had been hastily conceived and represented a solitary effort unaccompanied by any plans for later missions. Moreover, since NASA had placed priority on the exploration of Mars, the House took the position that funds requested by NASA for expenditure on the 1967 Venus mission might better be applied to the Mars Mariner and Voyager projects.

The Senate restored the full amount of the House reduction and authorized the 1967 Venus mission.

The managers on the part of the House receded and agreed that since a substantial investment has already been made in development of the spacecraft and experiments for the 1967 Venus mission, and that most of these funds would be unrecoverable in the event of cancellation, the NASA request should be authorized in full and the mission approved.

The Conferees noted, however, that NASA's plans for the continuing long-term exploration of Venus have not been fully developed, nor has NASA presented even preliminary plans for the scrutiny of the Congress and the scientific community. Such plans are necessary to a full understanding of the meaningful alternatives and options available to the nation in the conduct of a significant scientific program of planetary exploration. The managers on the part of the House and Senate agreed that NASA should, therefore, transmit to the Committee on Science and Astronautics of the House of Representatives and to the Committee on Aeronautical and Space Sciences of the Senate not later than September 1, 1966, a full report on the alternative approaches deemed scientifically, technically, and fiscally feasible for acquiring fundamental knowledge about the planet Venus. The report should cover the current state of knowledge and theory, the role of the Mariner 1967 mission in advancement of that knowledge, and, based upon expected or probable findings from that mission, the various program alternatives for a continuing effort in the exploration of Venus. The relationship of Venus exploration to that of other planets should be defined in terms of opportunities and scientific priorities as well as of technical mission possibilities. Cost and schedule projections for the various alternatives should be developed in order to permit thorough evaluation by the Congress of the program options. Careful and detailed planning is imperative if the nation is to reap the maximum gains in terms of science and technology from its program of unmanned planetary exploration.

The House increased by $20,000,000 the NASA Fiscal Year 1967 request for funds to underwrite the 1969 Mars Mariner mission. The additional funds were specifically designated for initiation of development of an instrumented probe to be incorporated in the spacecraft for the purpose of making direct measurements in the Martian atmosphere. Expert testimony had been received by the House committee to the effect that such a modification to the 1969 Mars Mariner mission would produce extremely valuable scientific and engineering data which would contribute directly to the success of the Voyager project.

The Senate restored the authorization for the 1969 Mars Mariner project to the amount of the original NASA request.

The managers on the part of the House receded and agreed to reduce the authorization for the 1969 Mars Mariner project to the original NASA request on the basis that there is general agreement that time no longer permits the accomplishment of the proposed development of an instrumented probe for incorporation in the 1969 Mars Mariner spacecraft.

Launch Vehicle Procurement Program

NASA requested a total of $152,000,000 for the Launch Vehicle Procurement Program. The House reduced this amount by $20,000,000 representing reductions in the following categories:

(1) A $10,000,000 across-the-board reduction in view of substantial carryovers in unobligated funds year after year in the Launch Vehicle Procurement account.

(2) A $6,000,000 reduction representing the amount requested by NASA for purchase of an Atlas-Agena launch vehicle for the 1967 Venus Mariner mission. The House eliminated the Venus mission, hence there would be no need for the launch vehicle.

(3) A reduction of $4,000,000 in the NASA request of $14,000,000 for sustaining engineering and maintenance associated with the Centaur launch vehicle. The House took the position that SEM funds are used to upgrade reliability or improve performance capabilities of developed launch vehicles; Centaur is still an undeveloped vehicle for which substantial amounts have been requested under the Launch Vehicle Development Program.

The Senate restored the entire $20,000,000 House reduction.

The managers on the part of the Senate receded and agreed upon an across-the-board reduction of $5,250,000 in the Launch Vehicle Procurement account.

The managers on the part of the House receded and agreed to the $6,000,000 restoration for the purchase of an Atlas-Agena vehicle to be used in the 1967 Venus mission which has been authorized by the Conference Committee.

The managers on the part of the Senate receded and agreed to the $4,000,000 reduction in Centaur SEM funds.

Space Power and Electric Propulsion Systems Program

NASA requested $42,500,000 for Space Power and Electric Propulsion Systems. The House bill increased this amount by $2,400,000, which was to be used for an increased component testing program for the SNAP-8 nuclear electric generator. The Senate bill denied this increase; however, the managers on the part of the Senate agreed to an increase of $2.0 million on this item. The final authorization for Space Power and Electric Propulsion Systems is $44,500,000.

Chemical Propulsion Program

The NASA request for Chemical Propulsion Research was $37,000,000. That amount included $3.5 million for the continued development of the 260-inch solid propellant booster. The House bill provided an increase of $7.5 million for the project, or a total of $11 million, which would speed development and would provide for a full-length firing rather than a NASA proposed one-half length firing. The Senate amendment denied this increase and agreed with the NASA request and proposal. Although our limited propulsion capability has been a major factor in the progress of our Nation's space program to date and although solid propulsion technology has the potential of providing a safer, more versatile and more economical booster than other boosters under development, the managers on the part of the Senate would not agree to the increased funding authorized by the House. The compromise position finally agreed upon was $4.0 million additional for the project. This amount will allow NASA to initiate procurement of the long lead time items such as the nozzle, the steel case and facility modifications so that a full-length firing can be conducted within approximately 18 months.

The managers on the part of the House are concerned that NASA is not aggressively pursuing the development of large solid propellant boosters, despite the fact that the House has expressed a sense of urgency for the vigorous prosecution of large solid propellant technology. The House has also provided additional authorization in prior years and has continued to press NASA to accelerate significantly the pace of that program to realize the potential inherent in large booster systems. The total amount authorized for Chemical Propulsion is $41,000,000.

CONSTRUCTION OF FACILITIES

Electronics Research Center

NASA requested $10,000,000 for the Electronics Research Center to construct two buildings and center support facilities. The House reduced the request to $5 million since the prior authorizations for FY 1965 or FY 1966 had not been obligated. The Senate restored the FY 1967 budget request in full. In consideration of limited progress to date in site acquisition, the managers on the part of the Senate receded to a total of $7,500,000 for facilities which will permit NASA to proceed with an integral construction unit of one of the two new buildings, plus center support facilities, along with the previously authorized construction.

ADMINISTRATIVE OPERATIONS

For *Administrative Operations*, NASA requested authorization in the amount of $663,900,000. The House approved $644,210,150, effecting a reduction of $19,689,850 in the NASA request. The Senate restored $14,689,850, approving $658,900,000. The Senate also included restrictive language in the bill by: dividing the total authorized into two categories—"personnel compensation and benefits, $397,444,000", and "other expenses, $261,456,000"; adding section 3b which would limit the extent of transfer authority into "personnel compensation and benefits" to 1% ($3.97 million); adding section 3c which would limit the extent of transfer into "other expenses" to 10% ($26.1 million); and striking from section 4 the authority to transfer funds into the Administrative Operations account. The managers on the part of the Senate receded and agreed to strike all restrictive language and further receded to a net reduction of $8,000,000, resulting in a total amount for Administrative Operations of $655,900,000.

—*Architect-Engineer Fees.*—The House receded from its proposal to include a new Section 5 which would permit NASA to waive the provisions of 10 U.S.C. 2306(d) regarding limitations on architect-engineer fees.

The Conferees noted that the Comptroller General had on April 20, 1966, at the request of the Committee on Science and Astronautics of the House, initiated a government-wide study of the interpretations and applications of the six percent limitation imposed by various statutes on architect-engineer contracts. The Conferees agreed that the study, as proposed by the House, should be continued to completion by the GAO in lieu of a separate study by the Bureau of the Budget as proposed by the Senate.

In view of this, the Conferees agreed that any legislative action deemed necessary for NASA in this regard should await the results of this study scheduled for completion by January 1, 1967, and until such date with respect to this limitation, the Comptroller General should not take exception to or disallow as unlawful, costs incurred by NASA for research, development or engineering activities required for the establishment of design criteria or development of design concepts involving the use of nuclear energy or other advanced and unusual technology provided that in contracting for such activities NASA is consistent with practices and procedures established by the Department of Defense for similar work.

Public Law 89-528
89th Congress, H. R. 14324
August 5, 1966

An Act

To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and administrative operations, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration the sum of $5,000,419,000, as follows:

National Aeronautics and Space Administration Authorization Act, 1967.

(a) For "Research and development," $4,248,600,000, for the following programs:

(1) Gemini, $40,600,000;
(2) Apollo, $2,974,200,000;
(3) Advanced missions, $8,000,000;
(4) Physics and astronomy, $129,900,000;
(5) Lunar and planetary exploration, $210,900,000;
(6) Bioscience, $35,400,000;
(7) Meteorological satellites, $43,600,000;
(8) Communication and applications technology satellites, $26,400,000;
(9) Launch vehicle development, $33,700,000;
(10) Launch vehicle procurement, $142,750,000;
(11) Space vehicle systems, $36,000,000;
(12) Electronics systems, $36,800,000;
(13) Human factor systems, $17,000,000;
(14) Basic research, $23,000,000;
(15) Space power and electric propulsion systems, $44,500,000;
(16) Nuclear rockets, $53,000,000;
(17) Chemical propulsion, $41,000,000;
(18) Aeronautics, $35,000,000;
(19) Tracking and data acquisition, $270,850,000;
(20) Sustaining university program, $41,000,000;
(21) Technology utilization, $5,000,000.

(b) For "Construction of facilities," including land acquisitions, $95,919,000, as follows:

(1) Electronics Research Center, Cambridge, Massachusetts, $7,500,000;
(2) Goddard Space Flight Center, Greenbelt, Maryland, $710,000;
80 STAT. 336
(3) Jet Propulsion Laboratory, Pasadena, California, $350,000;
80 STAT. 337
(4) John F. Kennedy Space Center, NASA, Kennedy Space Center, Florida, $37,876,000;
(5) Langley Research Center, Hampton, Virginia, $6,100,000;
(6) Lewis Research Center, Cleveland and Sandusky, Ohio, $16,000,000;
(7) Manned Spacecraft Center, Houston, Texas, $12,800,000;
(8) Michoud Assembly Facility, New Orleans and Slidell, Louisiana, $700,000;
(9) Mississippi Test Facility, Mississippi, $1,700,000;
(10) Wallops Station, Wallops Island, Virginia, $205,000;
(11) Various locations, $6,478,000;
(12) Facility planning and design not otherwise provided for, $5,500,000.

(c) For "Administrative operations," $655,900,000.

(d) Appropriations for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required for the performance of research and development contracts and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant.

Construction of major facilities. Prior notice to Congress.

None of the funds appropriated for "Research and development" pursuant to this Act may be used for construction of any major facility, the estimated cost of which, including collateral equipment, exceeds $250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Astronautics of the House of Representatives and the Committee on Aeronautical and Space Sciences of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Administrative operations" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

Scientific consultations.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed $35,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) No part of the funds appropriated pursuant to subsection 1(c) for maintenance, repairs, alterations, and minor construction shall be used for the construction of any new facility the estimated cost of which, including collateral equipment, exceeds $100,000.

(h) When so specified in an appropriation Act, any appropriation authorized under this Act to the National Aeronautics and Space Administration may initially be used, during the fiscal year 1967, to finance work or activities for which funds have been provided in any other appropriation available to the Administration and appropriate adjustments between such appropriations shall subsequently be made in accordance with generally accepted accounting principles.

80 STAT. 337
80 STAT. 336

Cost variations.

SEC. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1), (2), (3), (4), (5), (6), (7), (8), (9), (10), and (11), of subsection 1(b) may, in the discretion of the Administrator of the National Aeronautics and Space Administration, be varied upward 5 per centum to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed a total of $90,419,000.

Transfer of funds.

SEC. 3. Not to exceed one-half of 1 per centum of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the

"Construction of facilities" appropriation, and, when so transferred, together with $10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (12) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such action until the enactment of the next authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of thirty days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Astronautics of the House of Representatives and to the Committee on Aeronautical and Space Sciences of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Reports to Congress.

SEC. 4. Notwithstanding any other provision of this Act—

Restrictions.

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Astronautics or the Senate Committee on Aeronautical and Space Sciences,

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by sections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before

the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Geographical distribution of funds.

SEC. 5. It is the sense of Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Short title.

SEC. 6. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1967".

Approved August 5, 1966.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 1441 (Comm. on Science & Astronautics) and No. 1748 (Comm. of Conference).
SENATE REPORT No. 1184 (Comm. on Aeronautical & Space Sciences).
CONGRESSIONAL RECORD, Vol. 112 (1966):
May 3: Considered and passed House.
May 23: Considered in Senate.
May 24: Considered and passed Senate, amended.
July 21: House agreed to conference report.
July 22: Senate agreed to conference report.

89TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } { No. 1477

INDEPENDENT OFFICES APPROPRIATION BILL, 1967

MAY 5, 1966.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. EVINS of Tennessee, from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 14921]

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The Committee considered budget estimates totaling $5,012,000,000 for the space program which is $163,000,000 less than was appropriated for NASA in the current year. The Committee is recommending $4,950,000,000, which is $62,000,000 less than the request for 1967 and $225,000,000 under the funding level for fiscal year 1966. These reductions have been made in three categories as follows.

Research and development.—The Committee recommends $4,245,000,000 for all research and development activities of the agency related to space and aeronautics including the full request for fiscal year 1967 for the Apollo program. This is a reduction of $1,600,000 in the budget estimate and $286,000,000 less than 1966. Funds appropriated under this heading are used primarily to finance contracts with industry. The decline in funding from 1966 is attributable to decreasing requirements of the Gemini program which is nearing completion.

Construction of facilities.—The Committee considered budget estimates totaling $101,500,000 to construct new and expanded facilities and is recommending $75,000,000. This is $26,500,000 less than the budget request and $15,000,000 more than in 1966. While the Committee has not specifically denied individual projects, it is not impressed with the immediate necessity of funding all of them at this time as some facilities relate to operations after accomplishment of the manned lunar landings. In view of the previous funding levels for construction, the amount recommended should amply provide for additional facilities needed.

Administrative operations.—The budget proposes $663,900,000 for administrative expenses and to cover the cost of operating research centers and other offices and installations. This appropriation currently supports an employment level of about 34,000 positions. The Committee is recommending $630,000,000 for 1967, which is $33,900,000 less than the budget estimate.

Calendar No. 1398

89TH CONGRESS, 2d Session | SENATE | REPORT No. 1433

INDEPENDENT OFFICES APPROPRIATION BILL, 1967

AUGUST 4, 1966.—Ordered to be printed

Mr. MAGNUSON, from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 14921]

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS

WARREN G. MAGNUSON, Washington, *Chairman*

LISTER HILL, Alabama
ALLEN J. ELLENDER, Louisiana
A. WILLIS ROBERTSON, Virginia
RICHARD B. RUSSELL, Georgia
SPESSARD L. HOLLAND, Florida
JOHN O. PASTORE, Rhode Island
A. S. MIKE MONRONEY, Oklahoma
JOHN STENNIS, Mississippi
CARL HAYDEN, Arizona
Chairman Ex Officio

GORDON ALLOTT, Colorado
MILTON R. YOUNG, North Dakota
MARGARET CHASE SMITH, Maine
ROMAN L. HRUSKA, Nebraska
NORRIS COTTON, New Hampshire
LEVERETT SALTONSTALL, Massachusetts
Ex Officio

ALSO ON AERONAUTICAL AND SPACE ACTIVITIES

CLINTON P. ANDERSON, New Mexico
STUART SYMINGTON, Missouri
BOURKE B. HICKENLOOPER, Iowa

PAUL W. [illegible], *Clerk to Subcommittee*
HARLEY M. DIRKS, *Assistant*

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

In summary, the committee recommends a total amount for NASA of $4,991,600,000, which is $20,400,000 under the budget estimate of $5,012,000,000, is $8,819,000 under the authorization total of $5,000,419,000, and is $41,600,000 over the amount in the House bill of $4,950,000,000.

The amounts for the items of appropriations are as follows:

RESEARCH AND DEVELOPMENT

1966 appropriation	$4,531,000,000
Estimate, 1967	4,246,600,000
Authorization	4,248,600,000
House allowance	4,245,000,000
Committee recommendation	4,246,600,000

Restoration of $1,600,000 is recommended by the committee, to provide the full amount of the budget estimate of $4,246,600,000 for research and development, which is $2,000,000 under the authorization.

Within the amount recommended, the Gemini program is funded at the full budget estimate of $40,600,000 and the Apollo program is funded at the full budget estimate of $2,974,200,000.

CONSTRUCTION OF FACILITIES

1966 appropriation	$60,000,000
Estimate, 1967	101,500,000
Authorization	95,919,000
House allowance	75,000,000
Committee recommendation	95,000,000

Restoration of $20,000,000 is recommended by the committee, to provide a total amount of $95,000,000 for construction of facilities, which is $6,500,000 below the budget estimate and is $919,000 below the authorization.

ADMINISTRATIVE OPERATIONS

1966 appropriation	$584,000,000
Estimate, 1967	663,900,000
Authorization	655,900,000
House allowance	630,000,000
Committee recommendation	650,000,000

The committee recommends restoration of $20,000,000, to provide a total amount for administrative operations of $650,000,000, which is $13,900,000 below the budget estimate and is $5,900,000 below the authorization.

89TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } { No. 1859

SUNDRY INDEPENDENT EXECUTIVE AGENCIES AND THE DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT APPROPRIATIONS, 1967

AUGUST 17, 1966.—Ordered to be printed

Mr. EVINS of Tennessee, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany H.R. 14921]

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Amendment No. 23: Appropriates $4,245,000,000 for research and development as proposed by the House instead of $2,246,600,000 as proposed by the Senate.

Amendment No. 24: Appropriates $83,000,000 for construction of facilities instead of $75,000,000 as proposed by the House and $95,000,000 as proposed by the Senate.

Amendment No. 25: Appropriates $640,000,000 for administrative operations instead of $630,000,000 as proposed by the House and $650,000,000 as proposed by the Senate.

Managers on the Part of the House.

JOE L. EVINS,
EDWARD P. BOLAND,
GEORGE E. SHIPLEY,
ROBERT N. GIAIMO,
GEORGE MAHON,
CHARLES R. JONAS
WILLIAM E. MINSHALL
JOHN J. RHODES
FRANK T. BOW

Managers on the Part of the Senate.

WARREN G. MAGNUSON,
ALLEN J. ELLENDER,
RICHARD B. RUSSELL,
SPESSARD L. HOLLAND,
A. S. MIKE MONRONEY,
CLINTON P. ANDERSON,
GORDON ALLOTT,
MILTON R. YOUNG,
LEVERETT SALTONSTALL.

Public Law 89-555
89th Congress, H. R. 14921
September 6, 1966

An Act

Making appropriations for sundry independent executive bureaus, boards, commissions, corporations, agencies, offices, and the Department of Housing and Urban Development for the fiscal year ending June 30, 1967, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for sundry independent executive bureaus, boards, commissions, corporations, agencies, offices, and the Department of Housing and Urban Development for the fiscal year ending June 30, 1967, and for other purposes, namely: Independent Offices Appropriation Act, 1967.

TITLE I

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Research and Development

For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, supplies, materials, equipment; maintenance, repair, and alteration of real and personal property; and purchase, hire, maintenance, and operation of other than administrative aircraft necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration, $4,245,000,000, to remain available until expended.

Construction of Facilities

For advance planning, design, and construction of facilities for the National Aeronautics and Space Administration and for the acquisition or condemnation of real property, as authorized by law, $83,000,000, to remain available until expended.

Administrative Operations

For necessary expenses, not otherwise provided for, of the operation of the National Aeronautics and Space Administration, including uniforms or allowances therefor, as authorized by the Act of September 1, 1954, as amended (5 U.S.C. 2131); minor construction; supplies, materials, services, and equipment; awards; hire, maintenance and operation of administrative aircraft; purchase and hire of motor vehicles (including purchase of not to exceed thirty-one passenger motor vehicles, of which sixteen shall be for replacement only); and maintenance, repair, and alteration of real and personal property; $640,000,000: *Provided*, That contracts may be entered into under this appropriation for maintenance and operation of facilities, and for other services, to be provided during the next fiscal year. 68 Stat. 1114; 79 Stat. 1122.

General Provisions

Not to exceed 5 per centum of any appropriation made available to the National Aeronautics and Space Administration by this Act may be transferred to any other such appropriation. Transfer of appropriations.

Not to exceed $35,000 of the appropriation "Administrative Operations" in this Act for the National Aeronautics and Space Administration shall be available for scientific consultations or extraordinary expense, to be expended upon the approval or authority of the Administrator and his determination shall be final and conclusive. Scientific consultations, extraordinary expenses.

No part of any appropriation made available to the National Aeronautics and Space Administration by this Act shall be used for expenses of participating in a manned lunar landing to be carried out jointly by the United States and any other country without the consent of the Congress. Manned lunar landing. Congressional consent requirement.

Any appropriation in this Act to the National Aeronautics and Space Administration may initially be used during the current fiscal year to finance procurement for which funds have been provided in any other appropriation available to the Administration and appropriate adjustments between such appropriations shall subsequently be made in accordance with generally accepted accounting principles. Procurement funds.

Independent Offices—General Provisions

Sec. 102. Where appropriations in this title are expendable for travel expenses of employees and no specific limitation has been placed thereon, the expenditures for such travel expenses may not exceed the amounts set forth therefor in the budget estimates submitted for the appropriations: *Provided*, That this section shall not apply to travel performed by uncompensated officials of local boards and appeal boards of the Selective Service System; to travel performed in connection with the investigation of aircraft accidents by the Civil Aeronautics Board; to travel performed directly in connection with care and treatment of medical beneficiaries of the Veterans Administration; or to payments to interagency motor pools where separately set forth in the budget schedules. Travel expenses.

Sec. 103. No part of any appropriation contained in this title shall be available to pay the salary of any person filling a position, other than a temporary position, formerly held by an employee who has left to enter the Armed Forces of the United States and has satisfactorily completed his period of active military or naval service and has within ninety days after his release from such service or from hospitalization continuing after discharge for a period of not more than one year made application for restoration to his former position and has been certified by the Civil Service Commission as still qualified to perform the duties of his former position and has not been restored thereto. Positions of employees entering Armed Forces.

Sec. 104. No part of any appropriation made available by the provisions of this title shall be used for the purchase or sale of real estate or for the purpose of establishing new offices outside the District of Columbia: *Provided*, That this limitation shall not apply to programs which have been approved by the Congress and appropriations made therefor. Real estate purchase or sale, restriction.

Appropriations contained in this Act for carrying out civil defense activities shall not be available in excess of the limitations on appropriations contained in section 408 of the Federal Civil Defense Act, as amended (50 U.S.C. App. 2260). 64 Stat. 1257; 72 Stat. 534.

No part of any appropriation in this Act shall be available for the construction of warehouses or for the lease of warehouse space in any building which is to be constructed specifically for civil defense activities.

No part of any appropriation contained in this Act, or of the funds available for expenditure by any corporation or agency included in this Act, shall be used for construction of fallout shelters except in construction of new buildings under the heading, "Construction, Public Buildings Projects", for the current fiscal year. Ante, p. 670.

TITLE III—GENERAL PROVISIONS

SEC. 301. No part of any appropriation contained in this Act, or of the funds available for expenditure by any corporation or agency included in this Act, shall be used for publicity or propaganda purposes designed to support or defeat legislation pending before the Congress. Publicity or propaganda.

SEC. 302. No part of any appropriation contained in this Act, or of the funds available for expenditure by any corporation or agency included in this Act, shall be used to pay the compensation of any employee engaged in personnel work in excess of the number that would be provided by a ratio of one such employee to one hundred and thirty-five, or a part thereof, full-time, part-time, and intermittent employees of the corporation or agency concerned: *Provided*, That for purposes of this section employees shall be considered as engaged in personnel work if they spend half time or more in personnel administration consisting of direction and administration of the personnel program; employment, placement, and separation; job evaluation and classification; employee relations and services; wage administration; and processing, recording, and reporting. Personnel work.

SEC. 303. None of the funds provided herein shall be used to pay any recipient of a grant for the conduct of a research project an amount equal to as much as the entire cost of such project. Research projects.

SEC. 304. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

This Act may be cited as the "Independent Offices Appropriation Act, 1967". Short title.

Approved September 6, 1966.